

MELSEC-Q/L Positioning Module FB Library Reference Manual

Applicable modules:

QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N,
QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4, LD75P4,
LD75D4

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Reference Manual Revision History

Reference Manual Number	Date	Description
FBM-M033-A	2010/08/06	First edition
FBM-M033-B	2011/04/30	Added "Reference Manual Revision History", "Overview", "Chinese version of GX Works2".
FBM-M033-C	2012/03/26	Added a list of applicable modules. Added chapter 1. Changed the formats of Applicable hardware and software and Error codes in Details of the FB Library. Changed the item numbers of Function description and Restrictions and precautions in Details of the FB Library. Added descriptions on the setting values of input labels to Appendix 1 - FB Library Application Examples.

1. Overview

1.1 Overview of the FB Library

This FB library is for using the QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4, LD75P4, and LD75D4 positioning modules.

1.2 Function of the FB Library

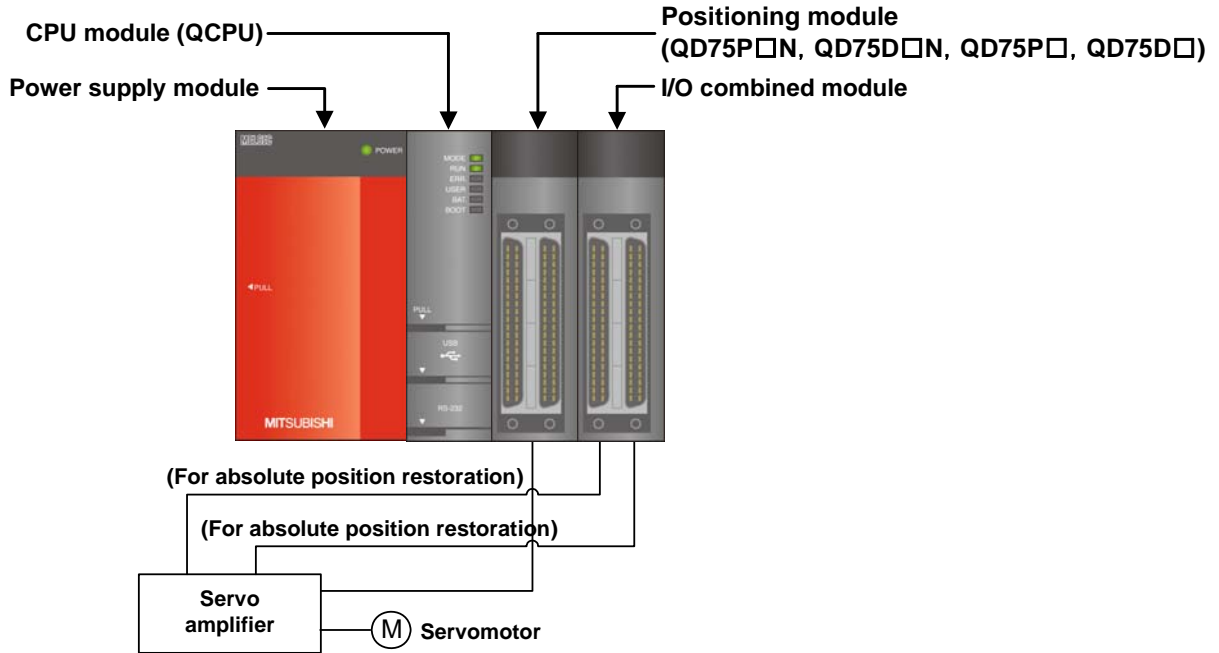
Item	Description
M+D75_SetBPARAM1	Sets basic parameters 1.
M+D75_SetBPARAM2	Sets basic parameters 2.
M+D75_SetDPARAM1	Sets detailed parameters 1.
M+D75_SetDPARAM2	Sets detailed parameters 2.
M+D75_SetZBPARAM	Sets OPR basic parameters.
M+D75_SetZDPARAM	Sets OPR detailed parameters.
M+D75_PosiParamSet	Sets the specified positioning data with the set positioning data (No.1 to 600).
M+D75_CPUReady	Performs the ON/OFF control of the PLC ready signal.
M+D75_StartPosi	Starts positioning specified with the data No. (1~600, 7000~7004, 9001~9003).
M+D75_JOG	Carries out JOG and inching operation.
M+D75_MPG	Carries out manual pulse generator operation (enables manual pulse generator operation).
M+D75_ChgSpeed	Executes speed change.
M+D75_ChgOverride	Changes an override value.
M+D75_ChgAccDecTime	Changes the acceleration/deceleration time during speed change.
M+D75_ChgPosi	Changes the target position.
M+D75_Restart	Issues a restart command to an axis that is stopped.
M+D75_ErrorOperation	Monitors errors and warnings, and performs error reset.
M+D75_InitParam	Issues a request to initialize parameters.
M+D75_WriteFlash	Issues a request to write the setting data to the flash ROM.
M+D75_ABRST	Executes absolute position restoration.

1.3 System Configuration Examples

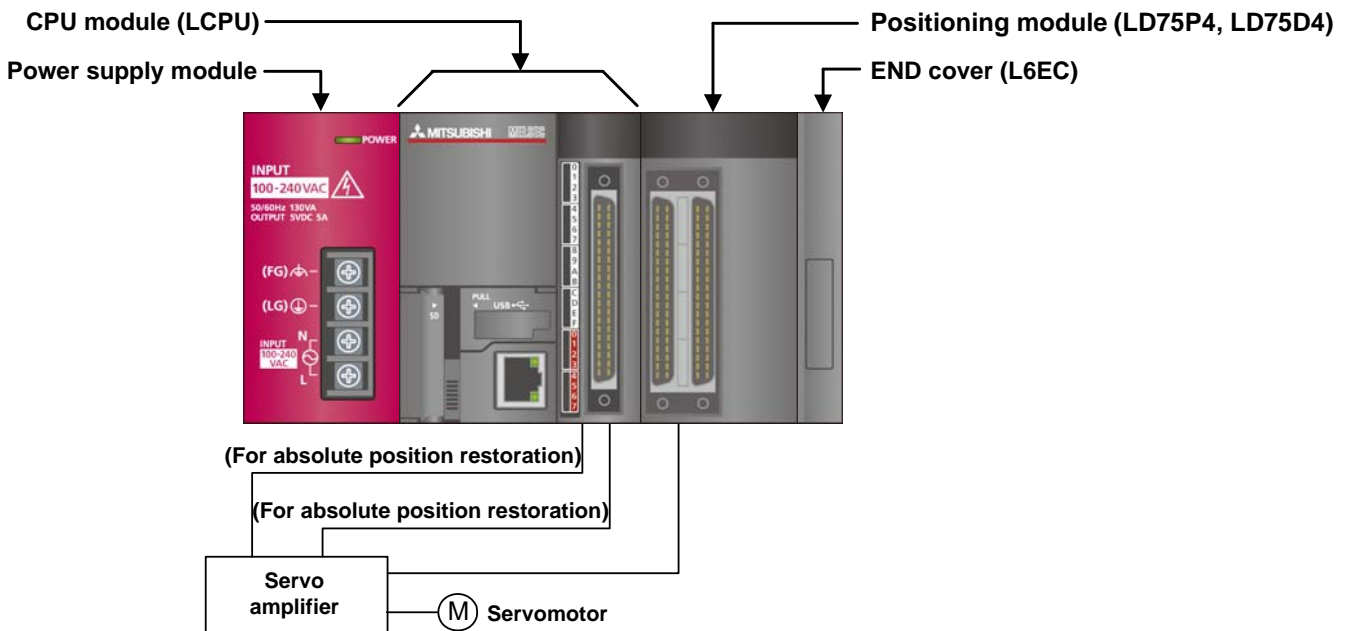
The application examples of D75FB are shown below.

I/O signals are allocated as shown in the figure below. Q series and L series have the same allocation.

(1) Q series system configuration example



(2) L series system configuration example



1.4 Relevant manual

Type QD75P/QD75D Positioning Module User's Manual

MELSEC-L LD75P/LD75D Positioning Module User's Manual

QCPU User's Manual (Hardware Design, Maintenance and Inspection)

MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)

GX Works2 Version 1 Operating Manual (Common)

GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

1.5 Note

Please make sure to read user's manuals for the corresponding products before using the products.

2. Details of the FB Library

2.1 M+D75_SetBPARAM1 (Basic parameters 1 setting)

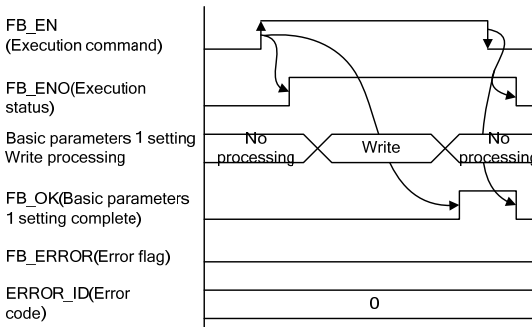
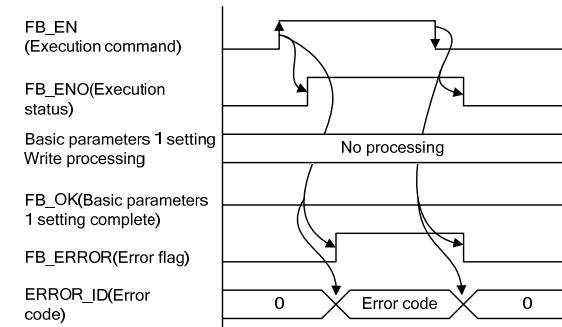
FB Name

M+D75_SetBPARAM1

Function Overview

Item	Description								
Function overview	Sets basic parameters 1 (Pr.1 to Pr.7).								
Symbol	<p>The diagram shows the M+D75_SetBPARAM1 function block with the following connections:</p> <ul style="list-style-type: none"> Execution command: B : FB_EN Module start XY address: W : i_Start_IO_No Target axis: W : i_Axis Pr.1: Unit setting: W : i_UnitSetting Pr.2: No. of pulses per rotation: W : i_Ap Pr.3: Movement amount per rotation: W : i_Al Pr.4: Unit magnification: W : i_Am Pr.5: Pulse output mode: W : i_PlsOutputMode Pr.6: Rotation direction setting: W : i_Rotation Pr.7: Bias speed at start: D : i_BiasSpeed FB_ENO : B — Execution status FB_OK : B — Basic parameters 1 setting complete FB_ERROR : B — Error flag ERROR_ID : W — Error code 								
Applicable hardware and software	Positioning Module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4								
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								

Item	Description							
Applicable hardware and software	Engineering software	GX Works2 *1 <table border="1" data-bbox="639 248 1469 398"> <thead> <tr> <th data-bbox="639 248 938 297">Language</th> <th data-bbox="938 248 1469 297">Software version</th> </tr> </thead> <tbody> <tr> <td data-bbox="639 297 938 347">English version</td> <td data-bbox="938 297 1469 347">Ver 1.24A or later</td> </tr> <tr> <td data-bbox="639 347 938 398">Chinese version</td> <td data-bbox="938 347 1469 398">Ver 1.49B or later</td> </tr> </tbody> </table> <p data-bbox="639 405 1469 488">*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later
Language	Software version							
English version	Ver 1.24A or later							
Chinese version	Ver 1.49B or later							
Programming language	Ladder							
Number of steps	272 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.							
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the set basic parameters 1 is written to the buffer memory. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) After FB_EN (Execution command) is turned ON, the FB is completed by one scan. 4) Parameters are validated when the PLC ready signal (Yn0) turns from OFF to ON. 5) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details. 							
Compiling method	Macro type							
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) If the parameter is set using GX Configurator-QP or the configuration function of GX Works 2, using this FB is unnecessary. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common). 							

Item	Description	
FB operation type	Pulsed execution (1 scan execution type)	
Application example	Refer to "Appendix 1 - FB Library Application Examples"	
Timing chart	<p>[When operation completes without error]</p> 	<p>[When an error occurs]</p> 
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block) 	

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Pr.1: Unit setting	i_UnitSetting	Word	0: mm 1: inch 2: degree 3: pulse	Set the unit used for defining positioning operations in Pr.1: unit setting.
Pr.2: No. of pulses per rotation	i_Ap	Word	1~65,535 (pulse)*1	Define the amount of movement achieved by each single pulse within a pulse train output. *1: Setting method ●1~32,767: Set in decimal. ●32,768~65,535: Set after converted into hexadecimal.
Pr.3: Movement amount per rotation	i_Al	Word	1~65,535*1	
Pr.4: Unit magnification	i_Am	Word	1:1-fold 10:10-fold 100:100-fold 1000:1000-fold	

Name (Comment)	Label name	Data type	Setting range	Description
Pr.5: Pulse output mode	i_PlsOutputMode	Word	0: PULSE/SIGN mode 1: CW/CCW mode 2: A phase/B phase (multiple of 4) 3: A phase/B phase (multiple of 1)	Set the pulse output mode to match the servo amplifier being used. The only valid data of the FB is the data at the moment when the PLC ready signal (Yn0) turns from OFF to ON for the first time after the power is switched ON or the CPU is reset.
Pr.6: Rotation direction setting	i_Rotation	Word	0: Current value increment with forward run pulse output 1: Current value increment with reverse run pulse output	Set the relation of the motor rotation direction and current value address increment/decrement.
Pr.7: Bias speed at start	i_BiasSpeed	Double Word	1) Pr.1: Unit setting = 0~2: 0~2,000,000,000 2) Pr.1: Unit setting = 3 QD75: 0~1,000,000 QD75N: 0~4,000,000 LD75: 0~4,000,000	Set the minimum speed upon starting.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Basic parameters 1 setting complete	FB_OK	Bit	OFF	When ON, it indicates that the parameter setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_SetBPARAM1 function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.2 M+D75_SetBPARAM2 (Basic parameters 2 setting)

FB Name

M+D75_SetBPARAM2

Function Overview

Item	Description							
Function overview	Sets basic parameters 2 (Pr.8 to Pr.10).							
Symbol	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p>Execution command — B : FB_EN</p> <p>Module start XY address — W : i_Start_IO_No</p> <p>Target axis — W : i_Axis</p> <p>Pr.8: Speed limit value — D : i_SpeedLimit</p> <p>Pr.9: Acceleration time 0 — D : i_AccTime0</p> <p>Pr.10: Deceleration time 0 — D : i_DecTime0</p> </div> <div style="width: 45%; border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">M+D75_SetBPARAM2</p> <p>FB_ENO : B — Execution status</p> <p>FB_OK : B — Basic parameters 2 setting complete</p> <p>FB_ERROR : B — Error flag</p> <p>ERROR_ID : W — Error code</p> </div> </div>							
Applicable hardware and software	Positioning Module <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model						
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4						
MELSEC-L Series	LD75P4, LD75D4							
CPU module <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model							
MELSEC-Q Series *1	Basic model							
	High performance model							
	Universal model							
MELSEC-L Series	LCPU							
Engineering software <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">GX Works2 *1</th> </tr> <tr> <th style="width: 40%;">Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	GX Works2 *1		Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later
GX Works2 *1								
Language	Software version							
English version	Ver 1.24A or later							
Chinese version	Ver 1.49B or later							
Programming language	Ladder							

Item	Description
Number of steps	256 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the set basic parameters 2 is written to the buffer memory. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) After FB_EN (Execution command) is turned ON, the FB is completed by one scan. 4) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) If the parameter is set using GX Configurator-QP or the configuration function of GX Works 2, using this FB is unnecessary. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"

Item	Description
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.

Name (Comment)	Label name	Data type	Setting range	Description
Pr.8: Speed limit value	i_SpeedLimit	Double Word	1) Pr.1: Unit setting = 0~2: 1~2,000,000,000 2) Pr.1: Unit setting = 3: QD75: 1~1,000,000 QD75N: 1~4,000,000 LD75: 1~4,000,000	Set the maximum speed during positioning and OPR operations.
Pr.9: Acceleration time 0	i_AccTime0	Double Word	1~8,388,608 (ms)	Specify the time for the speed to increase from zero to the Pr.8: speed limit value.
Pr.10: Deceleration time 0	i_DecTime0	Double Word	1~8,388,608 (ms)	Specify the time for the speed to decrease from the Pr.8: speed limit value to zero.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Basic parameters 2 setting complete	FB_OK	Bit	OFF	When ON, it indicates that the parameter setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_SetBPARAM2 function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.3 M+D75_SetDPARAM1 (Detailed parameters 1 setting)

FB Name

M+D75_SetDPARAM1

Function Overview

Item	Description																																																										
Function overview	Sets detailed parameters 1 (Pr.11 to Pr.24, and Pr.150).																																																										
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	Engineering software	GX Works2 *1 <table border="1" data-bbox="639 248 1469 398"> <thead> <tr> <th data-bbox="639 248 940 297">Language</th> <th data-bbox="940 248 1469 297">Software version</th> </tr> </thead> <tbody> <tr> <td data-bbox="639 297 940 347">English version</td> <td data-bbox="940 297 1469 347">Ver 1.24A or later</td> </tr> <tr> <td data-bbox="639 347 940 398">Chinese version</td> <td data-bbox="940 347 1469 398">Ver 1.49B or later</td> </tr> </tbody> </table> <p data-bbox="639 405 1469 488">*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later
Language	Software version							
English version	Ver 1.24A or later							
Chinese version	Ver 1.49B or later							
Programming language	Ladder							
Number of steps	313 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.							
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the set detailed parameters 1 is written to the buffer memory. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) After FB_EN (Execution command) is turned ON, the FB is completed by one scan. 4) Parameters are validated when the PLC ready signal (Yn0) turns from OFF to ON. 5) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details. 							
Compiling method	Macro type							
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) If the parameter is set using GX Configurator-QP or the configuration function of GX Works 2, using this FB is unnecessary. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common). 							

Item	Description
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Pr.11: Backlash compensation amount	i_Backlash	Word	0~65,535*1	Set the compensation amount of the error that occurs due to backlash when moving the machine via gears. *1: Setting method ●0~32,767: Set in decimal. ●32,768~65,535: Set after converted into hexadecimal.
Pr.12: Software stroke limit upper limit value	i_SSLimitUpper	Double Word	1) Pr.1: Unit setting = 0, 1, 3: -2,147,483,648~2,147,483,647 2) Pr.1: Unit setting = 2:	Set the upper limit for the machine's movement range during positioning control.
Pr.13: Software stroke limit lower limit value	i_SSLimitLower	Double Word	0~35,999,999	Set the lower limit for the machine's movement range during positioning control.

Name (Comment)	Label name	Data type	Setting range	Description
Pr.14: Software stroke limit selection	i_SSLimitSelect	Word	0: Apply software stroke limit on current feed value. 1: Apply software stroke limit on machine feed value.	Set whether to apply the software stroke limit on the "current feed value" or the "machine feed value".
Pr.15: Software stroke limit valid/invalid setting	i_SSLimitSetting	Word	0: Software stroke limit valid during JOG operation, inching operation, and manual pulse generator operation 1: Software stroke limit invalid during JOG operation, inching operation, and manual pulse generator operation	Set whether to validate the software stroke limit during JOG/Inching operation and manual pulse generator operation.
Pr.16: Command in-position width	i_InPosition	Double Word	1~2,147,483,647	Set the remaining distance that turns the command in-position ON.
Pr.17: Torque limit setting value	i_TorqueLimit	Word	1~500 (%)	Set the limit value of the torque generated by the servomotor.
Pr.18: M code ON signal output timing	i_MCodeTiming	Word	0: WITH mode 1: AFTER mode	Set the M code ON signal output timing.
Pr.19: Speed switching mode	i_SpeedSwMode	Word	0: Standard speed switching mode 1: Front-loading speed switching mode	Set whether to switch the Pr.19: speed switching mode with the standard switching or front-loading switching mode.
Pr.20: Interpolation speed designation method	i_InterpolSpeed	Word	0: Composite speed 1: Reference axis speed	When carrying out interpolation, set whether to designate the composite or reference axis speed.

Name (Comment)	Label name	Data type	Setting range	Description
Pr.21: Current feed value during speed control	i_SpeedCntValue	Word	0: Do not update current feed value 1: Update current feed value 2: Clear current feed value to zero	Specify whether to enable or disable the update of the current feed value while operations are performed under the speed control.
Pr.22: Input signal logic selection	i_InputSigLogic	Word	b0: Lower limit b1: Upper limit b2: Drive unit READY b3: Stop signal b4: External command b5: Zero signal b6: Near-point signal b7: Not used*1 b8: Manual pulse generator input b9~b15: Not used*1	Set the input signal logic that matches the signaling specification of the connected external device. *1: Set "0".
			0: Negative logic 1: Positive logic	
Pr.23: Output signal logic selection	i_OutputSigLogic	Word	b0: Command pulse signal b1: Not used*1 b2: Not used*1 b3: Not used*1 b4: Deviation counter clear b5~b15: Not used*1	Set the output signal logic that matches the signaling specification of the connected external device. *1: Set "0".
			0: Negative logic 1: Positive logic	
Pr.24: Manual pulse generator input selection	i_MPGInputSelect	Word	0: A-phase/B-phase; multiplied by 4 1: A-phase/B-phase; multiplied by 2 2: A-phase/B-phase; multiplied by 1 3: PULSE/SIGN	Set the manual pulse generator input pulse mode. *The setting is valid only when i_Axis (Target axis) is set to "1". When i_Axis (Target axis) is set to other than 1, set "0".

Name (Comment)	Label name	Data type	Setting range	Description
Pr.150: Speed-position function selection	i_SPFuncSelect	Word	0: Speed-positioning switching control (INC mode) 2: Speed-positioning switching control (ABS mode)	Select the mode of speed-positioning switching control.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Detailed parameters 1 setting complete	FB_OK	Bit	OFF	When ON, it indicates that the parameter setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_SetDPARAM1 function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.4 M+D75_SetDPARAM2 (Detailed parameters 2 setting)

FB Name

M+D75_SetDPARAM2

Function Overview

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	Universal model									
MELSEC-L Series	LCPU									
Engineering software	<p>GX Works2 *1</p> <table border="1"> <thead> <tr> <th>Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later			
Language	Software version									
English version	Ver 1.24A or later									
Chinese version	Ver 1.49B or later									
Programming language	Ladder									
Number of steps	<p>320 steps (for MELSEC-Q series universal model CPU)</p> <p>*The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.</p>									
Function description	<p>1) By turning on FB_EN (Execution command), the set detailed parameters 2 is written to the buffer memory.</p> <p>2) FB operation is one-shot only, triggered by the FB_EN signal.</p> <p>3) After FB_EN (Execution command) is turned ON, the FB is completed by one scan.</p> <p>4) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.</p>									
Compiling method	Macro type									

Item	Description
Restrictions and precautions	<p>1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation.</p> <p>2) The FB cannot be used in an interrupt program.</p> <p>3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF.</p> <p>4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis.</p> <p>5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program.</p> <p>6) Every input must be provided with a value for proper FB operation.</p> <p>7) If the parameter is set using GX Configurator-QP or the configuration function of GX Works 2, using this FB is unnecessary.</p> <p>8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application.</p> <p>For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).</p>
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Pr.25: Acceleration time 1	i_AccTime1	Double Word	1~8,388,608 (ms)	Set the time for the speed to increase from zero to the Pr.8: speed limit value.
Pr.26: Acceleration time 2	i_AccTime2			
Pr.27: Acceleration time 3	i_AccTime3			
Pr.28: Deceleration time 1	i_DecTime1			Set the time for the speed to decrease from the Pr.8: speed limit value to zero.
Pr.29: Deceleration time 2	i_DecTime2			
Pr.30: Deceleration time 3	i_DecTime3			
Pr.31: JOG speed limit value	i_JogSpeedLimit	Double Word	1) Pr.1: Unit setting = 0~2: 1~2,000,000,000 2) Pr.1: Unit setting = 3: QD75: 1~1,000,000 QD75N: 1~4,000,000 LD75: 1~4,000,000	Set the maximum speed for JOG operation.

Name (Comment)	Label name	Data type	Setting range	Description
Pr.32: JOG operation acceleration time selection	i_JogAccTimeSel	Word	0: Acceleration time 0 1: Acceleration time 1 2: Acceleration time 2 3: Acceleration time 3	Set which of the acceleration time 0 to 3 to use for the acceleration time during JOG operation.
Pr.33: JOG operation deceleration time selection	i_JogDecTimeSel	Word	0: Deceleration time 0 1: Deceleration time 1 2: Deceleration time 2 3: Deceleration time 3	Set which of the deceleration time 0 to 3 to use for the deceleration time during JOG operation.
Pr.34: Acceleration/deceleration process selection	i_AccDecProcess	Word	0: Trapezoid acceleration/deceleration process 1: S-curve acceleration/deceleration process	Set whether to use trapezoid acceleration/deceleration or S-curve acceleration/deceleration for the acceleration/deceleration process.
Pr.35: S-curve ratio	i_S_curveRatio	Word	1~100 (%)	Set the S-curve ratio for carrying out the S-curve acceleration/deceleration process.
Pr.36: Sudden stop deceleration time	i_SuddenStopTime	Double Word	1~8,388,608 (ms)	Set the time to reach speed 0 from the Pr.8: speed limit value during the sudden stop.
Pr.37: Stop group 1 sudden stop selection	i_StopGroup1	Word	0: Normal deceleration stop 1: Sudden stop	Set the method to stop when the stop causes in the stop groups occur.
Pr.38: Stop group 2 sudden stop selection	i_StopGroup2	Word		
Pr.39: Stop group 3 sudden stop selection	i_StopGroup3	Word		

Name (Comment)	Label name	Data type	Setting range	Description
Pr.40: Positioning complete signal output time	i_PosiCmpSignal	Word	0~65,535 (ms)*1	Set the output time of the positioning complete signal. *1: Setting method ●0~32,767: Set in decimal. ●32,768~65,535: Set after converted into hexadecimal.
Pr.41: Allowable circular interpolation error width	i_ArcErrPermit	Double Word	0~100,000	Set the allowable error range of the calculated arc path and end point address.
Pr.42: External command function selection	i_ExtComFuncSel	Word	0: External positioning start 1: External speed change request 2: Speed-position, position-speed switching request 3: Skip request	Select a command with which the external command signal should be associated.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Detailed parameters 2 setting complete	FB_OK	Bit	OFF	When ON, it indicates that the parameter setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_SetDPARAM2 function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.5 M+D75_SetZBPARAM (OPR basic parameters setting)

FB Name

M+D75_SetZBPARAM

Function Overview

Item	Description																																				
Function overview	Sets OPR basic parameters (Pr.43 to Pr.48).																																				
Symbol	<div style="border: 1px solid black; padding: 5px; margin: 5px;"> <p style="text-align: center;">M+D75_SetZBPARAM</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 30%;">FB_ENO : B</td> <td style="width: 10%;">— Execution status</td> </tr> <tr> <td>Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B</td> <td>— OPR basic parameters setting complete</td> </tr> <tr> <td>Target axis</td> <td>W : i_Axis</td> <td>FB_ERROR : B</td> <td>— Error flag</td> </tr> <tr> <td>Pr.43: OPR method</td> <td>W : i_OPRMethod</td> <td>ERROR_ID : W</td> <td>— Error code</td> </tr> <tr> <td>Pr.44: OPR direction</td> <td>W : i_OPRDirection</td> <td></td> <td></td> </tr> <tr> <td>Pr.45: OP address</td> <td>D : i_OPAddress</td> <td></td> <td></td> </tr> <tr> <td>Pr.46: OPR speed</td> <td>D : i_OPRSpeed</td> <td></td> <td></td> </tr> <tr> <td>Pr.47: Creep speed</td> <td>D : i_CreepSpeed</td> <td></td> <td></td> </tr> <tr> <td>Pr.48: OPR retry</td> <td>W : i_OPRRetry</td> <td></td> <td></td> </tr> </table> </div>	Execution command	B : FB_EN	FB_ENO : B	— Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	— OPR basic parameters setting complete	Target axis	W : i_Axis	FB_ERROR : B	— Error flag	Pr.43: OPR method	W : i_OPRMethod	ERROR_ID : W	— Error code	Pr.44: OPR direction	W : i_OPRDirection			Pr.45: OP address	D : i_OPAddress			Pr.46: OPR speed	D : i_OPRSpeed			Pr.47: Creep speed	D : i_CreepSpeed			Pr.48: OPR retry	W : i_OPRRetry		
Execution command	B : FB_EN	FB_ENO : B	— Execution status																																		
Module start XY address	W : i_Start_IO_No	FB_OK : B	— OPR basic parameters setting complete																																		
Target axis	W : i_Axis	FB_ERROR : B	— Error flag																																		
Pr.43: OPR method	W : i_OPRMethod	ERROR_ID : W	— Error code																																		
Pr.44: OPR direction	W : i_OPRDirection																																				
Pr.45: OP address	D : i_OPAddress																																				
Pr.46: OPR speed	D : i_OPRSpeed																																				
Pr.47: Creep speed	D : i_CreepSpeed																																				
Pr.48: OPR retry	W : i_OPRRetry																																				
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4																													
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MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4																																				
MELSEC-L Series	LD75P4, LD75D4																																				
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU																												
Series	Model																																				
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MELSEC-L Series	LCPU																																				

Item	Description							
	Engineering software	GX Works2 *1 <table border="1" data-bbox="639 248 1469 398"> <thead> <tr> <th data-bbox="639 248 938 297">Language</th> <th data-bbox="938 248 1469 297">Software version</th> </tr> </thead> <tbody> <tr> <td data-bbox="639 297 938 347">English version</td> <td data-bbox="938 297 1469 347">Ver 1.24A or later</td> </tr> <tr> <td data-bbox="639 347 938 398">Chinese version</td> <td data-bbox="938 347 1469 398">Ver 1.49B or later</td> </tr> </tbody> </table> <p data-bbox="639 405 1469 488">*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later
Language	Software version							
English version	Ver 1.24A or later							
Chinese version	Ver 1.49B or later							
Programming language	Ladder							
Number of steps	302 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.							
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the set OPR basic parameters is written to the buffer memory. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) After FB_EN (Execution command) is turned ON, the FB is completed by one scan. 4) Parameters are validated when the PLC ready signal (Yn0) turns from OFF to ON. 5) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details. 							
Compiling method	Macro type							
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) If the parameter is set using GX Configurator-QP or the configuration function of GX Works 2, using this FB is unnecessary. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common). 							

Item	Description
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Pr.43: OPR method	i_OPRMethod	Word	0: Near-point dog method 1: Stopper method 1) 2: Stopper method 2) 3: Stopper method 3) 4: Count method 1) 5: Count method 2)	Set the OPR method for carrying out machine OPR.
Pr.44: OPR direction	i_OPRDirection	Word	0: Positive direction (address increment direction) 1: Negative direction (address decrement direction)	Set the direction to start movement when starting machine OPR.
Pr.45: OP address	i_OPAddress	Double Word	1) Pr.1: Unit setting = 0,1,3: -2,147,483,648~ 2,147,483,647 2) Pr.1: Unit setting = 2: 0~35,999,999	Set the address used as the reference point for positioning control (ABS system).

Name (Comment)	Label name	Data type	Setting range	Description
Pr.46: OPR speed	i_OPRTSpeed	Double Word	1) Pr.1: Unit setting = 0~2: 1~2,000,000,000 2) Pr.1: Unit setting = 3: QD75: 1~1,000,000 QD75N: 1~4,000,000 LD75: 1~4,000,000	Set the speed for OPR.
Pr.47: Creep speed	i_CreepSpeed	Double Word	1) Pr.1: Unit setting = 0~2: 1~2,000,000,000 2) Pr.1: Unit setting = 3: QD75: 1~1,000,000 QD75N: 1~4,000,000 LD75: 1~4,000,000	Set the creep speed after near-point dog ON.
Pr.48: OPR retry	i_OPRTRetry	Word	0: Do not retry OPR with limit switch 1: Retry OPR with limit switch	Set whether to carry out OPR retry.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
OPR basic parameters setting complete	FB_OK	Bit	OFF	When ON, it indicates that the parameter setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_SetZBPARAM function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.6 M+D75_SetZDPARAM (OPR detailed parameters setting)

FB Name

M+D75_SetZDPARAM

Function Overview

Item	Description																																																					
Function overview	Sets OPR detailed parameters (Pr.49 to Pr.57)																																																					
Symbol	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">M+D75_SetZDPARAM</th> </tr> </thead> <tbody> <tr> <td style="width: 30%;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 30%;">FB_ENO : B</td> <td style="width: 10%;">— Execution status</td> </tr> <tr> <td>Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B</td> <td>— OPR detailed parameters setting complete</td> </tr> <tr> <td>Target axis</td> <td>W : i_Axis</td> <td>FB_ERROR : B</td> <td>— Error flag</td> </tr> <tr> <td>Pr.49: OPR dwell time</td> <td>W : i_OPRDwellTime</td> <td>ERROR_ID : W</td> <td>— Error code</td> </tr> <tr> <td>Pr.50: Movement amount after near-point dog ON</td> <td>D : i_DogOnLength</td> <td></td> <td></td> </tr> <tr> <td>Pr.51: OPR acceleration time selection</td> <td>W : i_OPRAccTimeSel</td> <td></td> <td></td> </tr> <tr> <td>Pr.52: OPR deceleration time selection</td> <td>W : i_OPDecTimeSel</td> <td></td> <td></td> </tr> <tr> <td>Pr.53: OP shift amount</td> <td>D : i_OPShift</td> <td></td> <td></td> </tr> <tr> <td>Pr.54: OPR torque limit value</td> <td>W : i_OPRTorqueLim</td> <td></td> <td></td> </tr> <tr> <td>Pr.55: Deviation counter clear signal output time</td> <td>W : i_DevCntClr</td> <td></td> <td></td> </tr> <tr> <td>Pr.56: Speed designation during OP shift</td> <td>W : i_ShiftSpeed</td> <td></td> <td></td> </tr> <tr> <td>Pr.57: Dwell time during OPR retry</td> <td>W : i_OPREtryDwell</td> <td></td> <td></td> </tr> </tbody> </table>		M+D75_SetZDPARAM				Execution command	B : FB_EN	FB_ENO : B	— Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	— OPR detailed parameters setting complete	Target axis	W : i_Axis	FB_ERROR : B	— Error flag	Pr.49: OPR dwell time	W : i_OPRDwellTime	ERROR_ID : W	— Error code	Pr.50: Movement amount after near-point dog ON	D : i_DogOnLength			Pr.51: OPR acceleration time selection	W : i_OPRAccTimeSel			Pr.52: OPR deceleration time selection	W : i_OPDecTimeSel			Pr.53: OP shift amount	D : i_OPShift			Pr.54: OPR torque limit value	W : i_OPRTorqueLim			Pr.55: Deviation counter clear signal output time	W : i_DevCntClr			Pr.56: Speed designation during OP shift	W : i_ShiftSpeed			Pr.57: Dwell time during OPR retry	W : i_OPREtryDwell		
M+D75_SetZDPARAM																																																						
Execution command	B : FB_EN	FB_ENO : B	— Execution status																																																			
Module start XY address	W : i_Start_IO_No	FB_OK : B	— OPR detailed parameters setting complete																																																			
Target axis	W : i_Axis	FB_ERROR : B	— Error flag																																																			
Pr.49: OPR dwell time	W : i_OPRDwellTime	ERROR_ID : W	— Error code																																																			
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Pr.52: OPR deceleration time selection	W : i_OPDecTimeSel																																																					
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Pr.55: Deviation counter clear signal output time	W : i_DevCntClr																																																					
Pr.56: Speed designation during OP shift	W : i_ShiftSpeed																																																					
Pr.57: Dwell time during OPR retry	W : i_OPREtryDwell																																																					
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4																																														
	Series	Model																																																				
MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4																																																					
MELSEC-L Series	LD75P4, LD75D4																																																					
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU																																													
Series	Model																																																					
MELSEC-Q Series *1	Basic model																																																					
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MELSEC-L Series	LCPU																																																					

Item	Description							
	Engineering software	GX Works2 *1 <table border="1" data-bbox="639 248 1469 398"> <thead> <tr> <th data-bbox="639 248 938 297">Language</th> <th data-bbox="938 248 1469 297">Software version</th> </tr> </thead> <tbody> <tr> <td data-bbox="639 297 938 347">English version</td> <td data-bbox="938 297 1469 347">Ver 1.24A or later</td> </tr> <tr> <td data-bbox="639 347 938 398">Chinese version</td> <td data-bbox="938 347 1469 398">Ver 1.49B or later</td> </tr> </tbody> </table> <p data-bbox="639 405 1469 488">*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later
Language	Software version							
English version	Ver 1.24A or later							
Chinese version	Ver 1.49B or later							
Programming language	Ladder							
Number of steps	286 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.							
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the set OPR detailed parameters is written to the buffer memory. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) After FB_EN (Execution command) is turned ON, the FB is completed by one scan. 4) Parameters are validated when the PLC ready signal (Yn0) turns from OFF to ON. 5) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details. 							
Compiling method	Macro type							
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) If the parameter is set using GX Configurator-QP or the configuration function of GX Works 2, using this FB is unnecessary. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common). 							

Item	Description
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●Type QD75P/QD75D Positioning Module User's Manual ●MELSEC-L LD75P/LD75D Positioning Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version 1 Operating Manual (Common) ●GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.

Name (Comment)	Label name	Data type	Setting range	Description
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Pr.49: OPR dwell time	i_OPRDwellTime	Word	0~65,535 (ms)*1	When stopper method 1) is set for Pr.43: OPR method, set the time for the machine OPR to complete after the near-point dog signal turns ON. *1: Setting method •0~32,767: Set in decimal. •32,768~65,535: Set after converted into hexadecimal.
Pr.50: Movement amount after near-point dog ON	i_DogOnLength	Double Word	0~2,147,483,647	When the count method 1) or 2) is set in Pr.43: OPR method, set the movement amount to the OP after the near-point dog ON.
Pr.51: OPR acceleration time selection	i_OPRAccTimeSel	Word	0: Acceleration time 0 1: Acceleration time 1 2: Acceleration time 2 3: Acceleration time 3	Set which of the acceleration time 0 to 3 to use for the acceleration time during OPR.
Pr.52: OPR deceleration time selection	i_OPRDecTimeSel	Word	0: Deceleration time 0 1: Deceleration time 1 2: Deceleration time 2 3: Deceleration time 3	Set which of the deceleration time 0 to 3 to use for the deceleration time during OPR.

Name (Comment)	Label name	Data type	Setting range	Description
Pr.53: OP shift amount	i_OPShift	Double Word	-2,147,483,648~2,147,483,647	Set the shift amount from the position stopped at with machine OPR.
Pr.54: OPR torque limit value	i_OPRTorqueLim	Word	1~300 (%)	Set the value to limit the servomotor torque after reaching the creep speed during machine OPR.
Pr.55: Deviation counter clear signal output time	i_DevCntClr	Word	1~65,535 (ms)*1	Set the duration of the deviation counter clear signal output during a machine OPR operation using any of the following methods: the near-point dog method, stopper methods 1) to 3), and count method 1). *1: Setting method •1~32,767: Set in decimal. •32,768~65,535: Set after converted into hexadecimal.
Pr.56: Speed designation during OP shift	i_ShiftSpeed	Word	0: OPR speed 1: Creep speed	Set the operation speed for when a value other than 0 is set for Pr.53: OP shift amount.
Pr.57: Dwell time during OPR retry	i_OPRRetryDwell	Word	0~65,535 (ms)*1	When setting Pr.48: OPR retry, set the stop time during the retry. *1: Setting method •0~32,767: Set in decimal. •32,768~65,535: Set after converted into hexadecimal.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
OPR detailed parameters setting complete	FB_OK	Bit	OFF	When ON, it indicates that the parameter setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_SetZDPARAM function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.7 M+D75_PosiParam (Positioning data setting)

FB Name

M+D75_PosiParam

Function Overview

Item	Description																																														
Function overview	Sets positioning data (Da.1 to Da.10).																																														
Symbol	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">M+D75_PosiParam</th> </tr> </thead> <tbody> <tr> <td style="width: 30%;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 40%;">FB_ENO : B — Execution status</td> </tr> <tr> <td>Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B — Positioning data setting complete</td> </tr> <tr> <td>Target axis</td> <td>W : i_Axis</td> <td>FB_ERROR : B — Error flag</td> </tr> <tr> <td>Data No.</td> <td>W : i_DataNo</td> <td>ERROR_ID : W — Error code</td> </tr> <tr> <td>Da.1: Operation pattern</td> <td>W : i_OperatePattern</td> <td></td> </tr> <tr> <td>Da.2: Control system</td> <td>W : i_ControlSystem</td> <td></td> </tr> <tr> <td>Da.3: Acceleration time No.</td> <td>W : i_AccTimeNo</td> <td></td> </tr> <tr> <td>Da.4: Deceleration time No.</td> <td>W : i_DecTimeNo</td> <td></td> </tr> <tr> <td>Da.5: Axis to be interpolated</td> <td>W : i_InterpolatedAx</td> <td></td> </tr> <tr> <td>Da.10: M code</td> <td>W : i_Mcode</td> <td></td> </tr> <tr> <td>Da.9: Dwell time</td> <td>W : i_DwellTime</td> <td></td> </tr> <tr> <td>Da.8: Command speed</td> <td>D : i_CommandSpeed</td> <td></td> </tr> <tr> <td>Da.6: Positioning address</td> <td>D : i_PosiParam</td> <td></td> </tr> <tr> <td>Da.7: Arc address</td> <td>D : i_ArcAddr</td> <td></td> </tr> </tbody> </table>		M+D75_PosiParam			Execution command	B : FB_EN	FB_ENO : B — Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B — Positioning data setting complete	Target axis	W : i_Axis	FB_ERROR : B — Error flag	Data No.	W : i_DataNo	ERROR_ID : W — Error code	Da.1: Operation pattern	W : i_OperatePattern		Da.2: Control system	W : i_ControlSystem		Da.3: Acceleration time No.	W : i_AccTimeNo		Da.4: Deceleration time No.	W : i_DecTimeNo		Da.5: Axis to be interpolated	W : i_InterpolatedAx		Da.10: M code	W : i_Mcode		Da.9: Dwell time	W : i_DwellTime		Da.8: Command speed	D : i_CommandSpeed		Da.6: Positioning address	D : i_PosiParam		Da.7: Arc address	D : i_ArcAddr	
M+D75_PosiParam																																															
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Da.7: Arc address	D : i_ArcAddr																																														
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4																																							
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MELSEC-L Series	LD75P4, LD75D4																																														
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU																																						
Series	Model																																														
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Item	Description							
	Engineering software	GX Works2 *1 <table border="1" data-bbox="639 248 1471 398"> <thead> <tr> <th>Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later
Language	Software version							
English version	Ver 1.24A or later							
Chinese version	Ver 1.49B or later							
Programming language	Ladder							
Number of steps	333 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.							
Function description	1) By turning ON FB_EN (Execution command), the set positioning data is written to the buffer memory. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) After FB_EN (Execution command) is turned ON, the FB is completed by one scan. 4) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.							
Compiling method	Macro type							
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).							
FB operation type	Pulsed execution (1 scan execution type)							
Application example	Refer to "Appendix 1 - FB Library Application Examples"							

Item	Description
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Data No.	i_DataNo	Word	1~600	Designate the positioning data No.
Da.1: Operation pattern	i_OperatePattern	Word	0: Positioning complete 1: Continuous positioning control 3: Continuous path control	Designate whether positioning is to be ended with just that data, or whether the positioning for the next data No. is to be carried out in succession. *If the invalid range of 4 or higher is set, bit 0 and 1 will be used. (For instance, when 4 is set, the operation will be performed under 0.)

Name (Comment)	Label name	Data type	Setting range	Description
Da.2: Control system	i_ControlSystem	Word	01h: ABS1 1-axis linear control (ABS) 02h: INC1 1-axis linear control (INC) 03h: FEED1 1-axis fixed-feed control 04h: VF1 1-axis speed control (forward run) 05h: VR1 1-axis speed control (reverse run) 06h: VPF speed-position switching control (forward run) 07h: VPR speed-position switching control (reverse run) 08h: PVF position-speed switching control (forward run) 09h: PVR position-speed switching control (reverse run) 0Ah: ABS2 2-axis linear interpolation control (ABS) 0Bh: INC2 2-axis linear interpolation control (INC) 0Ch: FEED2 fixed-feed control by 2-axis linear interpolation 0Dh: ABS \frown circular interpolation control with sub point specified (ABS) 0Eh: INC \frown circular interpolation control	Set the "control system" for carrying out positioning control.

Name (Comment)	Label name	Data type	Setting range	Description
			<p>with sub point specified (INC)</p> <p>0Fh: ABS. circular interpolation control with center point specified (ABS, CW)</p> <p>10h: ABS. circular interpolation control with center point specified (ABS, CCW)</p> <p>11h: INC. circular interpolation control with center point specified (INC, CW)</p> <p>12h: INC. circular interpolation control with center point specified (INC, CCW)</p> <p>13h: VF2 2-axis speed control (forward run)</p> <p>14h: VR2 2-axis speed control (reverse run)</p> <p>15h: ABS3 3-axis linear interpolation control (ABS)</p> <p>16h: INC3 3-axis linear interpolation control (INC)</p> <p>17h: FEED3 fixed-feed control by 3-axis linear interpolation control</p> <p>18h: VF3 3-axis speed control (forward run)</p> <p>19h: VR3 3-axis speed control (reverse run)</p>	

Name (Comment)	Label name	Data type	Setting range	Description
			1Ah: ABS4 4-axis linear interpolation control (ABS) 1Bh: INC4 4-axis linear interpolation control (INC) 1Ch: FEED4 fixed-feed control by 4-axis linear interpolation control 1Dh: VF4 4-axis speed control (forward run) 1Eh: VR4 4-axis speed control (reverse run) 80h: NOP NOP instruction 81h: POS current value changing 82h: JUMP JUMP instruction 83h: LOOP declares the beginning of LOOP to LEND section 84h: LEND declares the end of LOOP to LEND section	
Da.3: Acceleration time No.	i_AccTimeNo	Word	0: Acceleration time 0 1: Acceleration time 1 2: Acceleration time 2 3: Acceleration time 3	Set which of "acceleration time 0 to 3" to use for the acceleration time during positioning. *If the invalid range of 4 or higher is set, bit 0 and 1 will be used. (For instance, when 4 is set, the operation will be performed under 0.)

Name (Comment)	Label name	Data type	Setting range	Description
Da.4: Deceleration time No.	i_DecTimeNo	Word	0: Deceleration time 0 1: Deceleration time 1 2: Deceleration time 2 3: Deceleration time 3	Set which of "deceleration time 0 to 3" to use for the deceleration time during positioning. *If the invalid range of 4 or higher is set, bit 0 and 1 will be used. (For instance, when 4 is set, the operation will be performed under 0.)
Da.5: Axis to be interpolated	i_InterpolatedAx	Word	0: Axis 1 1: Axis 2 2: Axis 3 3: Axis 4	Set the target axis for operations under the 2-axis interpolation control. Do not specify the own axis number or any number except the numbers in the setting range. Set "0" for operations under no interpolation, or 3 or 4-axis interpolation.
Da.10: M code	i_Mcode	Word	Da.2: Control system = 82h: JUMP instruction 0~10 Da.2: Control system = 83h: LOOP 1~65,535*1 Da.2: Control system = other than above 0~65,535*2	Set the "condition data No.", "number of repetitions", or "M code" depending on how the "control system" is set. *1: Setting method ●1~32,767: Set in decimal. ●32,768~65,535: Set after converted into hexadecimal. *2: Setting method ●0~32,767: Set in decimal. ●32,768~65,535: Set after converted into hexadecimal.

Name (Comment)	Label name	Data type	Setting range	Description
Da.9: Dwell time	i_DwellTime	Word	Da.2: Control system = 82h: JUMP instruction 1~600 Da.2: Control system = 82h: other than JUMP instruction 0~65,535*1	Set the "positioning data No." or "dwell time" corresponding to the "control system". *1: Setting method ●0~32,767: Set in decimal. ●32,768~65,535: Set after converted into hexadecimal.
Da.8: Command speed	i_CommandSpeed	Double Word	1) Pr.1: Unit setting = 0~2: 1~2,000,000,000 2) Pr.1: Unit setting = 3: QD75: 1~1,000,000 QD75N: 1~4,000,000 LD75: 1~4,000,000 -1: Current speed*1 (Speed set for previous positioning data No.)	Set the command speed for positioning. *1: The speed set for previous positioning data No. will be used for positioning control.

Name (Comment)	Label name	Data type	Setting range	Description
Da.6: Positioning address	i_PosAddr	Double Word	<p>1) Pr.1: Unit setting = 0,1,3 Da.2: Control system = 06h~09h 0~2,147,483,647 Da.2: Control system other than above -2,147,483,648~2,147,483,647</p> <p>2) Pr.1: Unit setting = 2 Da.2: Control system = 01h, 0Ah, 15h, 1Ah, 81h 0~35,999,999 Da.2: Control system = 02h, 0Bh, 16h, 1Bh, 03h, 0Ch, 17h, 1Ch -2,147,483,648~2,147,483,647 Da.2: Control system = 06h, 07h INC mode 0~2,147,483,647 ABS mode 0~35,999,999 Da.2: Control system = 08h, 09h 0~2,147,483,647</p>	<p>Designate the target position/movement amount for positioning control.</p> <p>The setting value range differs according to the "control system".</p>
Da.7: Arc address	i_ArcAddr	Double Word	<p>1) Pr.1: Unit setting = 0,1,3 -2,147,483,648~2,147,483,647</p> <p>2) Pr.1: Unit setting = 2 Not used*1</p>	<p>Use only for carrying out circular interpolation control.</p> <p>With sub point designation, set the sub point address.</p> <p>With center point designation, set the center point address of the arc.</p> <p>*1: Set "0".</p>

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Positioning data setting complete	FB_OK	Bit	OFF	When ON, it indicates that the positioning data setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_PosiParam function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.8 M+D75_CPUReady (PLC ready signal ON)

FB Name

M+D75_CPUReady

Function Overview

Item	Description																
Function overview	Outputs PLC ready signal.																
Symbol	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p style="text-align: center;">M+D75_CPUReady</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 30%;">FB_ENO : B</td> <td style="width: 10%;">Execution status</td> </tr> <tr> <td>Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B</td> <td>Signal ON complete</td> </tr> <tr> <td></td> <td></td> <td>FB_ERROR : B</td> <td>Error flag</td> </tr> <tr> <td></td> <td></td> <td>ERROR_ID : W</td> <td>Error code</td> </tr> </table> </div>	Execution command	B : FB_EN	FB_ENO : B	Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	Signal ON complete			FB_ERROR : B	Error flag			ERROR_ID : W	Error code
Execution command	B : FB_EN	FB_ENO : B	Execution status														
Module start XY address	W : i_Start_IO_No	FB_OK : B	Signal ON complete														
		FB_ERROR : B	Error flag														
		ERROR_ID : W	Error code														
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4									
	Series	Model															
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4															
MELSEC-L Series	LD75P4, LD75D4																
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU								
Series	Model																
MELSEC-Q Series *1	Basic model																
	High performance model																
	Universal model																
MELSEC-L Series	LCPU																
Engineering software	<p>GX Works2 *1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later										
Language	Software version																
English version	Ver 1.24A or later																
Chinese version	Ver 1.49B or later																
Programming language	Ladder																

Item	Description
Number of steps	245 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) By turning ON FB_EN (Execution command), the CPU ready signal (Yn0) is turned ON. 2) After FB_EN (Execution command) is turned ON, the FB is completed by one scan.
Compiling method	Macro type
Restrictions and precautions	<p>1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation.</p> <p>2) The FB cannot be used in an interrupt program.</p> <p>3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF.</p> <p>4) This FB uses index register Z9. Please do not use this index register in an interrupt program.</p> <p>5) Every input must be provided with a value for proper FB operation.</p> <p>6) When FB_EN (Execution command) is turned ON from OFF, the OFF time should be set to 100 ms or longer.</p> <p>7) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application.</p> <p>For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).</p>
FB operation type	Real-time execution
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<p>The timing chart illustrates the sequence of events for the FB execution. It shows six signals over time:</p> <ul style="list-style-type: none"> FB_EN (Execution command): A pulse that starts the execution. FB_ENO (Execution status): A signal that becomes active (ON) when FB_EN is turned ON and remains ON until FB_EN is turned OFF. PLC ready (Yn0): A signal that becomes active (ON) when FB_EN is turned ON and returns to OFF when FB_EN is turned OFF. FB_OK (Signal ON complete): A signal that becomes active (ON) when FB_EN is turned ON and returns to OFF when FB_EN is turned OFF. FB_ERROR (Error flag): A signal that remains OFF throughout the execution. ERROR_ID (Error code): A signal that remains at 0 throughout the execution.

Item	Description
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
None	None	None

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Signal ON complete	FB_OK	Bit	OFF	When ON, it indicates that the CPU ready signal ON is completed.
Error flag	FB_ERROR	Bit	OFF	Always OFF
Error code	ERROR_ID	Word	0	Always 0

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_CPUReady function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.9 M+D75_StartPosi (Positioning start)

FB Name

M+D75_StartPosi

Function Overview

Item	Description																					
Function overview	Starts positioning.																					
Symbol	<div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> M+D75_StartPosi </div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 30%;">FB_ENO : B</td> <td style="width: 10%;">—</td> <td>Execution status</td> </tr> <tr> <td>Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B</td> <td>—</td> <td>Execution complete</td> </tr> <tr> <td>Target axis</td> <td>W : i_Axis</td> <td>FB_ERROR : B</td> <td>—</td> <td>Error flag</td> </tr> <tr> <td>Cd.3: Positioning start No.</td> <td>W : i_StartNo</td> <td>ERROR_ID : W</td> <td>—</td> <td>Error code</td> </tr> </table>		Execution command	B : FB_EN	FB_ENO : B	—	Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	—	Execution complete	Target axis	W : i_Axis	FB_ERROR : B	—	Error flag	Cd.3: Positioning start No.	W : i_StartNo	ERROR_ID : W	—	Error code
Execution command	B : FB_EN	FB_ENO : B	—	Execution status																		
Module start XY address	W : i_Start_IO_No	FB_OK : B	—	Execution complete																		
Target axis	W : i_Axis	FB_ERROR : B	—	Error flag																		
Cd.3: Positioning start No.	W : i_StartNo	ERROR_ID : W	—	Error code																		
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4														
	Series	Model																				
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4																				
MELSEC-L Series	LD75P4, LD75D4																					
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU													
Series	Model																					
MELSEC-Q Series *1	Basic model																					
	High performance model																					
	Universal model																					
MELSEC-L Series	LCPU																					
Engineering software	GX Works2 *1 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 30%;">Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later															
Language	Software version																					
English version	Ver 1.24A or later																					
Chinese version	Ver 1.49B or later																					
Programming language	Ladder																					

Item	Description
Number of steps	320 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the control required for i_StartNo (Cd.3: Positioning start No.) is started. 2) The FB is started when the positioning start signal (Yn10) is turned ON. 3) When FB_EN (Execution command) is turned ON, the following conditions must be satisfied to turn ON the positioning start signal (Yn10). When the following conditions are not satisfied, the positioning start signal (Yn10) is not turned ON, but FB_OK (Execution complete) is turned ON. (In this case, warnings at start will not occur.) [Conditions] QD75/LD75 ready signal (Xn0): ON, Positioning start signal (Yn10): OFF, Start complete signal (Xn10): OFF, BUSY signal (XnC): OFF 4) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans. 5) When the start complete signal (Xn10) is ON or FB_EN (Execution command) is OFF, the positioning start signal (Yn10) is turned OFF. 6) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type

Item	Description
Restrictions and precautions	<p>1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation.</p> <p>2) The FB cannot be used in an interrupt program.</p> <p>3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF.</p> <p>4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis.</p> <p>5) This FB uses index registers Z9, Z8, Z7, and Z6. Please do not use these index registers in an interrupt program.</p> <p>6) When this FB is used in two or more places, a duplicated coil warning may occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error.</p> <p>7) The data is not set at start in the FB. Data necessary for each control of start No. must be set in the parameters and buffer memory beforehand.</p> <p>8) Every input must be provided with a value for proper FB operation.</p> <p>9) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application.</p> <p>For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).</p>
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>[When operation completes without error]</p> </div> <div style="width: 48%;"> <p>[When an error occurs]</p> </div> </div>

Item	Description
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.

Name (Comment)	Label name	Data type	Setting range	Description
Cd.3: Positioning start No.	i_StartNo	Word	1~600: Positioning data No. 7000~7004: Block start designation 9001: Machine OPR 9002: Fast OPR 9003: Current value changing 9004: Simultaneous starting of multiple axes	Set the "Positioning start No." required for the start control in Cd.3: Positioning start No.

● Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Execution complete	FB_OK	Bit	OFF	When ON, it indicates that the execution is completed. However, the FB is not turned ON if a module error has occurred at start.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_StartPosi function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.10 M+D75_JOG (JOG/inching operation)

FB Name

M+D75_JOG

Function Overview

Item	Description								
Function overview	Carries out JOG and inching operation.								
Symbol	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"> <p>Execution command — B : FB_EN</p> <p>Module start XY address — W : i_Start_IO_No</p> <p>Target axis — W : i_Axis</p> <p>Forward run JOG command — B : i_FowardJOG</p> <p>Reverse run JOG command — B : i_ReverseJOG</p> <p>Cd.17: JOG speed — D : i_JOGSpeed</p> <p>Cd.16: Inching movement amount — W : i_Inching</p> </div> <div style="border: 1px solid black; padding: 10px; text-align: center; width: 300px;"> <p>M+D75_JOG</p> </div> <div style="margin-left: 20px;"> <p>FB_ENO : B — Execution status</p> <p>FB_OK : B — Operation start complete</p> <p>FB_ERROR : B — Error flag</p> <p>ERROR_ID : W — Error code</p> </div> </div>								
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4							
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								
Engineering software	<p>GX Works2 *1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>		Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later	
Language	Software version								
English version	Ver 1.24A or later								
Chinese version	Ver 1.49B or later								

Item	Description
Programming language	Ladder
Number of steps	383 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) After FB_EN (Execution command) is turned ON, JOG or inching operation is carried out by turning ON i_FowardJOG (Forward run JOG command) or i_ReverseJOG (Reverse run JOG command). 2) After FB_EN (Execution command) is turned ON, the FB is always executed. 3) When i_FowardJOG (Forward run JOG command) and i_ReverseJOG (Reverse run JOG command) are simultaneously turned ON, the operation stops. 4) After FB_EN (Execution command) is turned ON, the operation will stop if FB_EN (Execution command) is turned OFF during i_FowardJOG (Forward run JOG command) or i_ReverseJOG (Reverse run JOG command) operation. 5) The operation will stop if i_ReverseJOG (Reverse run JOG command) is turned ON during the forward run JOG operation. When i_ReverseJOG (Reverse run JOG command) is turned OFF from ON, the forward run JOG operation will start again. (Work in the same way for the opposite operation.) 6) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type

Item	Description
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9, Z8, Z7, Z6, and Z5. Please do not use these index registers in an interrupt program. 6) It is dangerous to set the JOG speed to a large value from the beginning. For safety, first set to a smaller value and check the movement. Then, gradually increase the value to an optimum speed for control. 7) If a value other than "0" is set in Cd.16: Inching movement amount and Cd.17: JOG speed, the operation will become an inching operation. 8) When this FB is used in two or more places, a duplicated coil warning may occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 9) Every input must be provided with a value for proper FB operation. 10) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).
FB operation type	Real-time execution
Application example	Refer to "Appendix 1 - FB Library Application Examples"

Item	Description
Timing chart	<p>[When operation completes without error] (When 1-axis operation is performed)</p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>Forward run JOG operation (Inching movement amount 0)</p> </div> <div style="width: 45%;"> <p>Forward run inching operation (Inching movement amount other than 0)</p> </div> </div> <p>[When an error occurs]</p>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting. (After the forward run JOG command/reverse run JOG command is turned OFF and FB_EN is turned ON from OFF, turn ON the forward run JOG command/reverse run JOG command again.)

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Forward run JOG command	i_FowardJOG	Bit	ON, OFF	Turn ON for forward run JOG or forward run inching operation
Reverse run JOG command	i_ReverseJOG	Bit	ON, OFF	Turn ON for reverse run JOG or reverse run inching operation.
Cd.17: JOG speed	i_JOGSpeed	Double Word	1) Pr.1: Unit setting = 0~2: 0~2,000,000,000 2) Pr.1: Unit setting = 3: QD75: 0~1,000,000 QD75N: 0~4,000,000 LD75: 0~4,000,000	Set the JOG speed. Set "0" for inching operation.

Name (Comment)	Label name	Data type	Setting range	Description
Cd.16: Inching movement amount	i_Inching	Word	0~65,535*1 0: JOG operation	Set inching movement amount. Set "0" for JOG operation. *1: Setting method ●0~32,767: Set in decimal. ●32,768~65,535: Set after converted into hexadecimal.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Operation start complete	FB_OK	Bit	OFF	ON: JOG command is ON. OFF: JOG command is OFF.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_JOG function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.11 M+D75_MPG (Manual pulse generator operation)

FB Name

M+D75_MPG

Function Overview

Item	Description								
Function overview	Carries out manual pulse generator operation.								
Symbol	<p>The diagram shows a central box labeled 'M+D75_MPG'. On the left, three inputs are listed: 'Execution command' (B : FB_EN), 'Module start XY address' (W : L_Start_IO_No), and 'Target axis' (W : L_Axis). Below these is 'Cd.20: Manual pulse generator 1 pulse input magnification' (D : L_MPGInputMag). On the right, three outputs are listed: 'FB_ENO : B' (Execution status), 'FB_OK : B' (Manual pulse generator enable complete), and 'FB_ERROR : B' (Error flag). Below these is 'ERROR_ID : W' (Error code).</p>								
Applicable hardware and software	Positioning Module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4							
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								
Engineering software	<p>GX Works2 *1</p> <table border="1"> <thead> <tr> <th>Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later		
Language	Software version								
English version	Ver 1.24A or later								
Chinese version	Ver 1.49B or later								
Programming language	Ladder								

Item	Description
Number of steps	300 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) The manual pulse generator operation is enabled or disabled by turning ON/OFF FB_EN (Execution command). 2) After FB_EN (Execution command) is turned ON, the FB is always executed. 3) While FB_OK (Manual pulse generator enable complete) is turned ON, the workpiece is moved corresponding to the No. of pulses input from the manual pulse generator. 4) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) Do not change i_Axis (Target axis) while FB_EN (Execution command) is turned ON. 5) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 6) This FB uses index registers Z9, Z8, Z7, and Z6. Please do not use these index registers in an interrupt program. 7) Every input must be provided with a value for proper FB operation. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).
FB operation type	Real-time execution
Application example	Refer to "Appendix 1 - FB Library Application Examples"

Item	Description
Timing chart	<p>[When operation completes without error] [When an error occurs]</p> <p>(When 1-axis operation is performed)</p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>FB_EN (Execution command)</p> <p>FB_ENO(Execution status)</p> <p>Cd.21: Manual pulse generator enable flag</p> <p>BUSY signal (XnC)</p> <p>FB_OK(Manual pulse generator enable complete)</p> <p>FB_ERROR(Error flag)</p> <p>ERROR_ID(Error code)</p> </div> <div style="width: 45%;"> <p>FB_EN (Execution command)</p> <p>FB_ENO(Execution status)</p> <p>Cd.21: Manual pulse generator enable flag</p> <p>BUSY signal (XnC)</p> <p>FB_OK(Manual pulse generator enable complete)</p> <p>FB_ERROR(Error flag)</p> <p>ERROR_ID(Error code)</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.

Name (Comment)	Label name	Data type	Setting range	Description
Cd.20: Manual pulse generator 1 pulse input magnification	i_MPGInputMag	Double Word	QD75: 1~100 QD75N: 1~1,000 LD75: 1~1,000	Set the manual pulse generator 1 pulse input magnification. Value 0: Read as "1". Value 1001 or higher: Read as "1000".

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Manual pulse generator enable complete	FB_OK	Bit	OFF	When ON, it indicates that the manual pulse generator enable setting is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_MPG function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

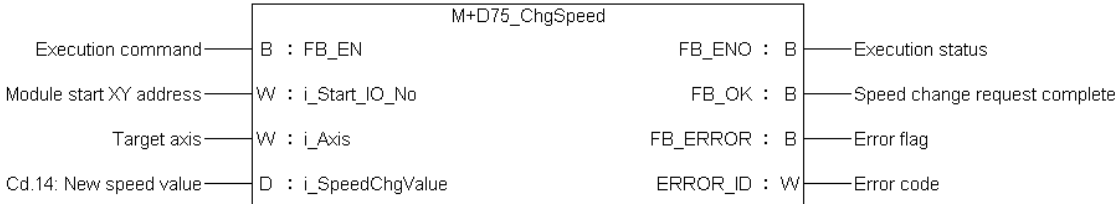
Before using any Mitsubishi products, please read all the relevant manuals.

2.12 M+D75_ChgSpeed (Speed change)

FB Name

M+D75_ChgSpeed

Function Overview

Item	Description								
Function overview	Executes speed change.								
Symbol									
Applicable hardware and software	Positioning Module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4							
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								
Engineering software	<p>GX Works2 *1</p> <table border="1"> <thead> <tr> <th>Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>		Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later	
Language	Software version								
English version	Ver 1.24A or later								
Chinese version	Ver 1.49B or later								
Programming language	Ladder								

Item	Description
Number of steps	286 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) The speed during control is changed to a newly designated speed by turning ON FB_EN (Execution command). 2) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans. 3) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9, Z8, and Z7. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) If FB_EN (Execution command) is turned ON while the BUSY signal (XnC) is OFF, the request will be ignored. In this case, FB_OK (Speed change request complete) is not turned ON. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"

Item	Description
Timing chart	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Cd.14: New speed	i_SpeedChgValue	Double	1) Pr.1: Unit setting = 0~2:	Set the new speed.

Name (Comment)	Label name	Data type	Setting range	Description
value		Word	0~2,000,000,000 2) Pr.1: Unit setting = 3: QD75: 0~1,000,000 QD75N: 0~4,000,000 LD75: 0~4,000,000	

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Speed change request complete	FB_OK	Bit	OFF	When ON, it indicates that the speed change request is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_ChgSpeed function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

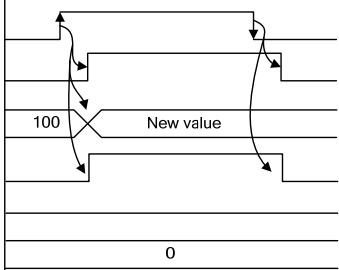
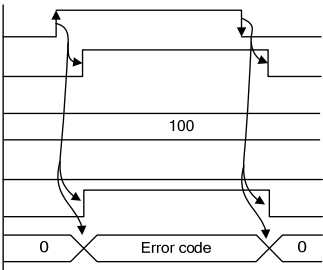
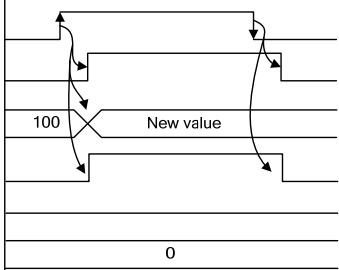
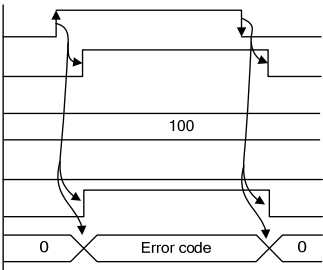
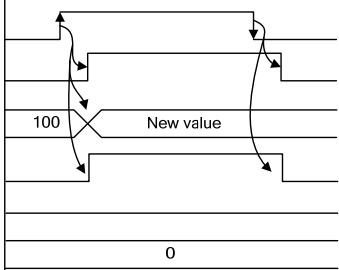
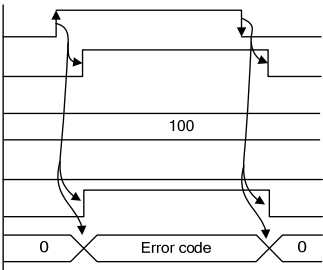
2.13 M+D75_ChgOverride (Override)

FB Name

M+D75_ChgOverride

Function Overview

Item	Description								
Function overview	Makes an override.								
Symbol	<p>The diagram shows the M+D75_ChgOverride function block with the following connections:</p> <ul style="list-style-type: none"> Execution command: B : FB_EN Module start XY address: W : i_Start_IO_No Target axis: W : i_Axis Cd.13: Positioning operation speed override: W : i_Override FB_ENO : B (Execution status) FB_OK : B (Override value setting complete) FB_ERROR : B (Error flag) ERROR_ID : W (Error code) 								
Applicable hardware and software	Positioning Module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4							
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
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MELSEC-L Series	LCPU								
Engineering software	<p>GX Works2 *1</p> <table border="1"> <thead> <tr> <th>Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later		
Language	Software version								
English version	Ver 1.24A or later								
Chinese version	Ver 1.49B or later								
Programming language	Ladder								

Item	Description		
Number of steps	252 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.		
Function description	1) By turning ON FB_EN (Execution command), the speed is changed for all control to be executed at a percentage specified with i_Override (Cd.13: Positioning operation speed override). 2) The FB can only be executed once per scan. 3) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.		
Compiling method	Macro type		
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9, Z8, and Z7. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).		
FB operation type	Pulsed execution (1 scan execution type)		
Application example	Refer to "Appendix 1 - FB Library Application Examples"		
Timing chart	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>[When operation completes without error]</p> <p>FB_EN (Execution command) FB_ENO(Execution status) Cd.13: Positioning operation speed override FB_OK (Override value setting complete) FB_ERROR(Error flag) ERROR_ID(Error code)</p>  </td> <td style="width: 50%; vertical-align: top;"> <p>[When an error occurs]</p> <p>FB_EN (Execution command) FB_ENO(Execution status) Cd.13: Positioning operation speed override FB_OK (Override value setting complete) FB_ERROR(Error flag) ERROR_ID(Error code)</p>  </td> </tr> </table>	<p>[When operation completes without error]</p> <p>FB_EN (Execution command) FB_ENO(Execution status) Cd.13: Positioning operation speed override FB_OK (Override value setting complete) FB_ERROR(Error flag) ERROR_ID(Error code)</p> 	<p>[When an error occurs]</p> <p>FB_EN (Execution command) FB_ENO(Execution status) Cd.13: Positioning operation speed override FB_OK (Override value setting complete) FB_ERROR(Error flag) ERROR_ID(Error code)</p> 
<p>[When operation completes without error]</p> <p>FB_EN (Execution command) FB_ENO(Execution status) Cd.13: Positioning operation speed override FB_OK (Override value setting complete) FB_ERROR(Error flag) ERROR_ID(Error code)</p> 	<p>[When an error occurs]</p> <p>FB_EN (Execution command) FB_ENO(Execution status) Cd.13: Positioning operation speed override FB_OK (Override value setting complete) FB_ERROR(Error flag) ERROR_ID(Error code)</p> 		

Item	Description
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the target axis.
Cd.13: Positioning operation speed override	i_Override	Word	1~300 (%)	Set the new speed as a percentage.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Override value setting complete	FB_OK	Bit	OFF	When ON, it indicates that the setting of override value is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_ChgOverride function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.14 M+D75_ChgAccDecTime (Acceleration/deceleration time setting value change)

FB Name

M+D75_ChgAccDecTime

Function Overview

Item	Description								
Function overview	Changes the setting value of the acceleration/deceleration time.								
Symbol	<p>The diagram shows the M+D75_ChgAccDecTime function block with the following connections:</p> <ul style="list-style-type: none"> Execution command: B : FB_EN Module start XY address: W : i_Start_IO_No Target axis: W : i_Axis Acceleration/deceleration time change enable flag: B : i_Enable Cd.10: New acceleration time value: D : i_NewAccTime Cd.11: New deceleration time value: D : i_NewDecTime FB_ENO : B — Execution status FB_OK : B — Acceleration/deceleration time change complete FB_ERROR : B — Error flag ERROR_ID : W — Error code 								
Applicable hardware and software	Positioning Module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4							
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								
Engineering software	<p>GX Works2 *1</p> <table border="1"> <thead> <tr> <th>Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>		Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later	
Language	Software version								
English version	Ver 1.24A or later								
Chinese version	Ver 1.49B or later								
Programming language	Ladder								

Item	Description
Number of steps	307 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<p>1) By turning ON FB_EN (Execution command), the acceleration/deceleration time setting is changed according to the i_Enable (Acceleration/deceleration time change enable flag).</p> <p>When i_Enable (Acceleration/deceleration time change enable flag) is ON, i_NewAccTime (Cd.10: New acceleration time value) and i_NewDecTime (Cd.11: New deceleration time value) are set, and Cd.12: Acceleration/deceleration time change during speed change, enable/disable selection is changed to 1: Acceleration/deceleration time change enable.</p> <p>When i_Enable (Acceleration/deceleration time change enable flag) is OFF, both i_NewAccTime (Cd.10: New acceleration time value) and i_NewDecTime (Cd.11: New deceleration time value) are not changed, and Cd.12: Acceleration/deceleration time change during speed change, enable/disable selection is changed to 0: Acceleration/deceleration time change disable.</p> <p>2) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.</p>
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9, Z8, and Z7. Please do not use these index registers in an interrupt program. 6) A duplicated coil warning may occur with this FB during compile operation. However this is not a problem and the FB will operate without error. 7) Every input must be provided with a value for proper FB operation. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. <p>For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).</p>

Item	Description
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>[When operation completes without error] (Cd.12: When enabling the acceleration/ deceleration time change during speed change, enable/disable selection)</p> </div> <div style="width: 48%;"> <p>(Cd.12: When disabling the acceleration/ deceleration time change during speed change, enable/disable selection)</p> </div> </div> <p>[When an error occurs]</p>
Relevant manuals	<ul style="list-style-type: none"> ●Type QD75P/QD75D Positioning Module User's Manual ●MELSEC-L LD75P/LD75D Positioning Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version 1 Operating Manual (Common) ●GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Acceleration/deceleration time change enable flag	i_Enable	Bit	ON: Enabled OFF: Disabled	Enable or disable acceleration/deceleration time change.
Cd.10: New acceleration time value	i_NewAccTime	Double Word	0~8,388,608(ms)	Set the new acceleration time. When 0 is set, the acceleration time is not changed even if the speed is changed. In this case, control is performed with the preset acceleration time.

Name (Comment)	Label name	Data type	Setting range	Description
Cd.11: New deceleration time value	i_NewDecTime	Double Word	0~8,388,608(ms)	Set the new deceleration time. When 0 is set, the deceleration time is not changed even if the speed is changed. In this case, the control is performed with the preset deceleration time.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Acceleration/deceleration time change complete	FB_OK	Bit	OFF	When ON, it indicates that the setting of Acceleration/deceleration time change is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_ChgAccDecTime function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.15 M+D75_ChgPosi (Target position change)

FB Name

M+D75_ChgPosi

Function Overview

Item	Description								
Function overview	Changes the target position.								
Symbol									
Applicable hardware and software	Positioning Module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4							
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								
Engineering software	<p>GX Works2 *1</p> <table border="1"> <thead> <tr> <th>Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>		Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later	
Language	Software version								
English version	Ver 1.24A or later								
Chinese version	Ver 1.49B or later								
Programming language	Ladder								

Item	Description
Number of steps	315 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) By turning ON FB_EN (Execution command), the target position under position control is changed to the value set for i_PosichgAddr (Cd.27: Target position change value (new address)). Also the command speed is changed to the value set for i_PosichgSpeed (Cd.28: Target position change value (new speed)) simultaneously. 2) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans. 3) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) This FB uses index registers Z9, Z8, and Z7. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) If FB_EN (Execution command) is turned ON while the BUSY signal (XnC) is OFF, the request will be ignored. In this case, FB_OK (Target position change complete) is not turned ON. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"

Item	Description
Timing chart	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>[When operation completes without error]</p> </div> <div style="width: 48%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.

Name (Comment)	Label name	Data type	Setting range	Description
Cd.27: Target position change value (new address)	i_PosichgAddr	Double Word	1) Pr.1: Unit setting=2 ABS mode 0~35,999,999 INC mode -2,147,483,648~ 2,147,483,647 2) Pr.1: Unit setting=Other than 2 -2,147,483,648~ 2,147,483,647	When changing the target position during a positioning operation, specify a new positioning address.
Cd.28: Target position change value (new speed)	i_PosichgSpeed	Double Word	1) Pr.1: Unit setting=0~2: 0~2,000,000,000 2) Pr.1: Unit setting=3: QD75: 0~1,000,000 QD75N: 0~4,000,000 LD75: 0~4,000,000	When changing the target position during a positioning operation, specify a new speed. When 0 is set, the speed is not changed.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Target position change acceptance complete	FB_OK	Bit	OFF	When ON, it indicates that a request of target position change request flag has been accepted by the module.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_ChgPosi function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.


Before using any Mitsubishi products, please read all the relevant manuals.

2.16 M+D75_Restart (Restart)

FB Name

M+D75_Restart

Function Overview

Item	Description								
Function overview	Performs restart.								
Symbol									
Applicable hardware and software	Positioning Module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4							
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								
Engineering software	<p>GX Works2 *1</p> <table border="1"> <thead> <tr> <th>Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later		
Language	Software version								
English version	Ver 1.24A or later								
Chinese version	Ver 1.49B or later								
Programming language	Ladder								

Item	Description
Number of steps	276 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<p>1) By turning ON FB_EN (Execution command), positioning operation that stopped when a stop cause has occurred restarts.</p> <p>2) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans.</p> <p>3) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.</p>
Compiling method	Macro type
Restrictions and precautions	<p>1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation.</p> <p>2) The FB cannot be used in an interrupt program.</p> <p>3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF.</p> <p>4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis.</p> <p>5) This FB uses index registers Z9, Z8, and Z7. Please do not use these index registers in an interrupt program.</p> <p>6) Every input must be provided with a value for proper FB operation.</p> <p>7) If FB_EN (Execution command) is turned ON while the BUSY signal (X signal) is OFF, the request will be ignored. In this case, FB_OK (Restart acceptance complete) is not turned ON.</p> <p>8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).</p>
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"

Item	Description
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Restart acceptance complete	FB_OK	Bit	OFF	When ON, it indicates that the restart command has been accepted by the module.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_Restart function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.17 M+D75_ErrorOperation (Error operation)

FB Name

M+D75_ErrorOperation

Function Overview

Item	Description								
Function overview	Monitors errors and warnings, and performs error reset.								
Symbol	<p>The diagram shows the M+D75_ErrorOperation function block with the following connections:</p> <ul style="list-style-type: none"> Inputs: <ul style="list-style-type: none"> Execution command: B : FB_EN Module start XY address: W : i_Start_IO_No Target axis: W : i_Axis Error reset command: B : i_ErrorReset Outputs: <ul style="list-style-type: none"> FB_ENO : B — Execution status FB_OK : B — Error reset processing complete o_UnitError : B — Axis error detection o_ErrorCode : W — Axis error code o_UnitWarning : B — Axis warning detection o_WarningCode : W — Axis warning code FB_ERROR : B — Error flag ERROR_ID : W — Error code 								
Applicable hardware and software	Positioning Module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4								
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1"> <thead> <tr> <th>Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								

Item	Description	
Engineering software	GX Works2 *1	
	Language	Software version
	English version	Ver 1.24A or later
	Chinese version	Ver 1.49B or later
	*1 For software versions applicable to the modules used, refer to "Relevant manuals".	
Programming language	Ladder	
Number of steps	320 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.	
Function description	<p>1) When FB_EN (Execution command) is turned ON, an error in the target axis is monitored.</p> <p>2) An error code is stored in o_ErrorCode (Axis error code) when a module error occurs.</p> <p>3) After FB_EN (Execution command) is turned ON, an error is reset when i_ErrorReset (Error reset command) is turned ON during error occurrence.</p> <p>4) A warning can be reset by turning ON i_ErrorReset (Error reset command) even when a module warning is occurring.</p> <p>5) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.</p>	
Compiling method	Macro type	

Item	Description
Restrictions and precautions	<p>1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation.</p> <p>2) The FB cannot be used in an interrupt program.</p> <p>3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF.</p> <p>4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis.</p> <p>5) This FB uses index registers Z9, Z8, and Z7. Please do not use these index registers in an interrupt program.</p> <p>6) Do not change i_Axis (Target axis) while FB_EN (Execution command) is turned ON.</p> <p>7) Every input must be provided with a value for proper FB operation.</p> <p>8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application.</p> <p>For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).</p>
FB operation type	Real-time execution
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>[When operation completes without error]</p> </div> <div style="width: 48%;"> <p>[When an error occurs]</p> </div> </div>

Item	Description
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	<p>The specified target axis is not valid.</p> <p>The target axis is not within the range of 1 to 4.</p>	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
Error reset command	i_ErrorReset	Bit	ON, OFF	ON: An error is reset. OFF: An error is not reset.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Error reset processing complete	FB_OK	Bit	OFF	When ON, it indicates that an error reset is completed.
Axis error detection	o_UnitError	Bit	OFF	When ON, it indicates that an axis error has occurred.
Axis error code	o_ErrorCode	Word	0	Return a code for a target axis error occurred in the module.
Axis warning detection	o_UnitWarning	Bit	OFF	When ON, it indicates that an axis warning has occurred.
Axis warning code	o_WarningCode	Word	0	Return a code for a target axis warning occurred in the module.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_ErrorOperation function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.18 M+D75_InitParam (Parameter initialization)

FB Name

M+D75_InitParam

Function Overview

Item	Description								
Function overview	Initializes parameters.								
Symbol	<div style="display: flex; align-items: center; justify-content: space-between;"> <div style="width: 30%;"> <p>Execution command — B : FB_EN</p> <p>Module start XY address — W : i_Start_IO_No</p> </div> <div style="width: 40%; border: 1px solid black; padding: 5px; text-align: center;"> <p>M+D75_InitParam</p> </div> <div style="width: 30%;"> <p>FB_ENO : B — Execution status</p> <p>FB_OK : B — Initialization complete</p> <p>FB_ERROR : B — Error flag</p> <p>ERROR_ID : W — Error code</p> </div> </div>								
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4	
	Series	Model							
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4							
MELSEC-L Series	LD75P4, LD75D4								
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU
Series	Model								
MELSEC-Q Series *1	Basic model								
	High performance model								
	Universal model								
MELSEC-L Series	LCPU								
Engineering software	<p>GX Works2 *1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later		
Language	Software version								
English version	Ver 1.24A or later								
Chinese version	Ver 1.49B or later								
Programming language	Ladder								

Item	Description
Number of steps	209 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) By turning ON FB_EN (Execution command), the setting data stored in the buffer memory and in flash ROM of LD75P4/LD75D4 or QD75P (4/4N, 2/2N, 1/1N)/QD75D (4/4N, 2/2N, 1/1N) are returned to the factory-set initial value. 2) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans.
Compiling method	Macro type
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 5) Every input must be provided with a value for proper FB operation. 6) PLC ready signal (Yn0) must be turned OFF to use this FB. FB_EN (Execution command) must also be turned OFF if PLC ready signal (Yn0) is turned ON with M+D75_CPUReady (PLC ready signal ON). 7) After completing the initialization of setting data, reset the CPU unit or reboot the PLC power. 8) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<p>The timing chart illustrates the sequence of signals during the execution of the FB. The signals shown are:</p> <ul style="list-style-type: none"> FB_EN (Execution command): A pulse that starts the execution. FB_ENO (Execution status): A pulse that occurs during the execution. Cd.2: Parameter initialization request: A pulse that occurs during the execution. FB_OK (Initialization complete): A pulse that occurs after the execution is complete. FB_ERROR (Error flag): A pulse that occurs if an error occurs during execution. ERROR_ID (Error code): A signal that is set to 0.

Item	Description
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
None	None	None

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Initialization complete	FB_OK	Bit	OFF	When ON, the initialization of parameters is completed.
Error flag	FB_ERROR	Bit	OFF	Always OFF
Error code	ERROR_ID	Word	0	Always 0

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_InitParam function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.19 M+D75_WriteFlash (Flash ROM writing)

FB Name

M+D75_WriteFlash

Function Overview

Item	Description																	
Function overview	Writes the setting data to the flash ROM.																	
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <div style="text-align: center; margin-bottom: 10px;">M+D75_WriteFlash</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; border-right: 1px solid black; padding-right: 5px;">Execution command</td> <td style="padding: 0 5px;">B : FB_EN</td> <td style="width: 30%; padding: 0 5px;">FB_ENO : B</td> <td style="border-left: 1px solid black; padding-left: 5px;">Execution status</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 5px;">Module start XY address</td> <td style="padding: 0 5px;">W : i_Start_IO_No</td> <td style="padding: 0 5px;">FB_OK : B</td> <td style="border-left: 1px solid black; padding-left: 5px;">Write complete</td> </tr> <tr> <td style="border-right: 1px solid black;"></td> <td></td> <td style="padding: 0 5px;">FB_ERROR : B</td> <td style="border-left: 1px solid black; padding-left: 5px;">Error flag</td> </tr> <tr> <td style="border-right: 1px solid black;"></td> <td></td> <td style="padding: 0 5px;">ERROR_ID : W</td> <td style="border-left: 1px solid black; padding-left: 5px;">Error code</td> </tr> </table> </div>		Execution command	B : FB_EN	FB_ENO : B	Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	Write complete			FB_ERROR : B	Error flag			ERROR_ID : W	Error code
Execution command	B : FB_EN	FB_ENO : B	Execution status															
Module start XY address	W : i_Start_IO_No	FB_OK : B	Write complete															
		FB_ERROR : B	Error flag															
		ERROR_ID : W	Error code															
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4										
	Series	Model																
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4																
MELSEC-L Series	LD75P4, LD75D4																	
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU									
Series	Model																	
MELSEC-Q Series *1	Basic model																	
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Language	Software version																	
English version	Ver 1.24A or later																	
Chinese version	Ver 1.49B or later																	
Programming language	Ladder																	

Item	Description
Number of steps	207 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) By turning ON FB_EN (Execution command), the data set in the buffer memory is written to the flash ROM. 2) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans.
Compiling method	Macro type
Restrictions and precautions	1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) Every input must be provided with a value for proper FB operation. 5) PLC ready signal (Yn0) must be turned OFF to use this FB. FB_EN (Execution command) must also be turned OFF if PLC ready signal (Yn0) is turned ON with M+D75_CPUReady (PLC ready signal ON). 6) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 7) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"
Timing chart	<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p>FB_EN (Execution command)</p> <p>FB_ENO(Execution status)</p> <p>Cd.1: Flash ROM writing request</p> <p>FB_OK(Write complete)</p> <p>FB_ERROR(Error flag)</p> <p>ERROR_ID(Error code)</p> </div> <div style="flex: 2;"> <p>The timing chart illustrates the sequence of signals during the execution of the Flash ROM write function block. It shows the following signal transitions:</p> <ul style="list-style-type: none"> FB_EN (Execution command): A pulsed signal that starts at 0, transitions to 1, and then returns to 0. FB_ENO (Execution status): A signal that transitions from 0 to 1 when FB_EN becomes 1 and returns to 0 when FB_EN returns to 0. Cd.1: Flash ROM writing request: A signal that transitions from 0 to 1 when FB_EN becomes 1 and returns to 0 when FB_EN returns to 0. FB_OK (Write complete): A signal that transitions from 0 to 1 after the execution period and returns to 0. FB_ERROR (Error flag): A signal that transitions from 0 to 1 during the execution period and returns to 0. ERROR_ID (Error code): A signal that transitions from 0 to 1 during the execution period and returns to 0. </div> </div>

Item	Description
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
None	None	None

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Write complete	FB_OK	Bit	OFF	When ON, it indicates that writing to flash ROM is completed.
Error flag	FB_ERROR	Bit	OFF	Always OFF
Error code	ERROR_ID	Word	0	Always 0

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_WriteFlash function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

2.20 M+D75_ABRST (Absolute position restoration)

FB Name

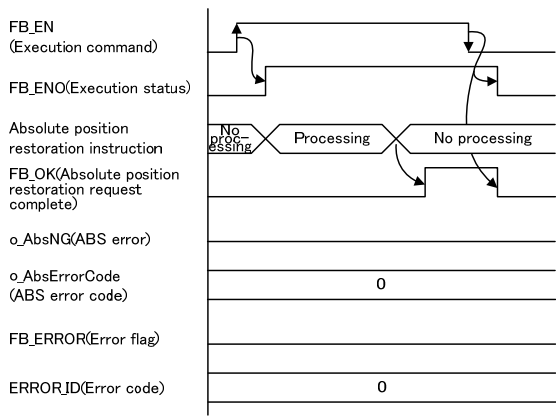
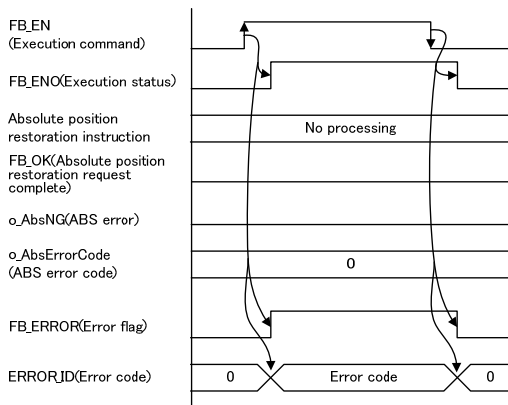
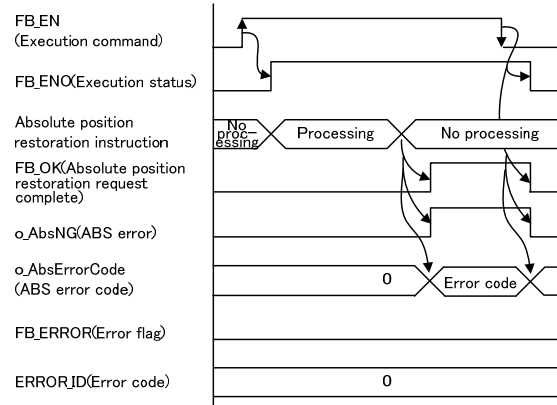
M+D75_ABRST

Function Overview

Item	Description																															
Function overview	Executes absolute position restoration.																															
Symbol	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">M+D75_ABRST</th> </tr> </thead> <tbody> <tr> <td style="width: 30%;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 40%;">FB_ENO : B — Execution status</td> </tr> <tr> <td>Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B — Absolute position restoration request complete</td> </tr> <tr> <td>Target axis</td> <td>W : i_Axis</td> <td>o_ServoON : B — Servo ON signal</td> </tr> <tr> <td>ABS data 0</td> <td>B : i_AbsBit0</td> <td>o_AbsTrMode : B — ABS transmission mode</td> </tr> <tr> <td>ABS data 1</td> <td>B : i_AbsBit1</td> <td>o_AbsRequest : B — ABS request flag</td> </tr> <tr> <td>Transmission data ready</td> <td>B : i_TrDataComplete</td> <td>o_AbsNG : B — ABS error</td> </tr> <tr> <td></td> <td></td> <td>o_AbsErrorCode : W — ABS error code</td> </tr> <tr> <td></td> <td></td> <td>FB_ERROR : B — Error flag</td> </tr> <tr> <td></td> <td></td> <td>ERROR_ID : W — Error code</td> </tr> </tbody> </table>		M+D75_ABRST			Execution command	B : FB_EN	FB_ENO : B — Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B — Absolute position restoration request complete	Target axis	W : i_Axis	o_ServoON : B — Servo ON signal	ABS data 0	B : i_AbsBit0	o_AbsTrMode : B — ABS transmission mode	ABS data 1	B : i_AbsBit1	o_AbsRequest : B — ABS request flag	Transmission data ready	B : i_TrDataComplete	o_AbsNG : B — ABS error			o_AbsErrorCode : W — ABS error code			FB_ERROR : B — Error flag			ERROR_ID : W — Error code
M+D75_ABRST																																
Execution command	B : FB_EN	FB_ENO : B — Execution status																														
Module start XY address	W : i_Start_IO_No	FB_OK : B — Absolute position restoration request complete																														
Target axis	W : i_Axis	o_ServoON : B — Servo ON signal																														
ABS data 0	B : i_AbsBit0	o_AbsTrMode : B — ABS transmission mode																														
ABS data 1	B : i_AbsBit1	o_AbsRequest : B — ABS request flag																														
Transmission data ready	B : i_TrDataComplete	o_AbsNG : B — ABS error																														
		o_AbsErrorCode : W — ABS error code																														
		FB_ERROR : B — Error flag																														
		ERROR_ID : W — Error code																														
Applicable hardware and software	Positioning Module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series</td> <td>QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LD75P4, LD75D4</td> </tr> </tbody> </table>	Series	Model	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4	MELSEC-L Series	LD75P4, LD75D4																								
	Series	Model																														
	MELSEC-Q Series	QD75P1N, QD75P2N, QD75P4N, QD75D1N, QD75D2N, QD75D4N, QD75P1, QD75P2, QD75P4, QD75D1, QD75D2, QD75D4																														
MELSEC-L Series	LD75P4, LD75D4																															
CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Series</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td rowspan="3">MELSEC-Q Series *1</td> <td>Basic model</td> </tr> <tr> <td>High performance model</td> </tr> <tr> <td>Universal model</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode)</p>	Series	Model	MELSEC-Q Series *1	Basic model	High performance model	Universal model	MELSEC-L Series	LCPU																							
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MELSEC-L Series	LCPU																															
Engineering software	<p>GX Works2 *1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Language</th> <th>Software version</th> </tr> </thead> <tbody> <tr> <td>English version</td> <td>Ver 1.24A or later</td> </tr> <tr> <td>Chinese version</td> <td>Ver 1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	English version	Ver 1.24A or later	Chinese version	Ver 1.49B or later																									
Language	Software version																															
English version	Ver 1.24A or later																															
Chinese version	Ver 1.49B or later																															

Item	Description
Programming language	Ladder
Number of steps	413 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) By turning ON FB_EN (Execution command), the absolute position is restored. 2) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans. 3) When absolute position restoration is completed abnormally, o_AbsNG (ABS error) is turned ON and an error code is stored in o_AbsErrorCode (ABS error code). For error codes, please refer to the manuals listed in the Relevant manuals section. 4) When the target axis setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type

Item	Description
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target axis. 5) Every input must be provided with a value for proper FB operation. 6) PLC ready signal (Yn0) must be turned OFF to use this FB. FB_EN (Execution command) must also be turned OFF if PLC ready signal (Yn0) is turned ON with M+D75_CPUReady (PLC ready signal ON). 7) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 8) When using this FB, FB_EN (Execution command) must remain turned ON after completion of absolute position restoration. 9) Do not turn OFF FB_EN (Execution command) during restoring the absolute position. If FB_EN (Execution command) is turned OFF before absolute position restoration is completed, an error occurs when FB_EN (Execution command) is turned ON again and an error 804 (dedicated instruction error) is stored in o_AbsErrorCode (ABS error code). If an error 804 (dedicated instruction error) occurs, reset the error and then turn OFF and ON FB_EN (Execution command) again. 10) The pulse output mode and external I/O signal logic, etc. must be properly configured to match devices and systems connected to the QD75 or LD75. Configure these settings by making the GX Works2 switch setting according to the application. For details on how to use the intelligent function module switch setting, refer to GX Works2 Operating Manual (Common).
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 1 - FB Library Application Examples"

Item	Description
Timing chart	<p>[When operation completes without error]</p>  <p>[When an error occurs] (When the target axis setting is out of range)</p>  <p>[When an error occurs] (When absolute position restoration command completed abnormally)</p> 
Relevant manuals	<ul style="list-style-type: none"> •Type QD75P/QD75D Positioning Module User's Manual •MELSEC-L LD75P/LD75D Positioning Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version 1 Operating Manual (Common) •GX Works2 Version 1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 4.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the D75 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	Word	1~4	Specify the axis number.
ABS data 0	i_AbsBit0	Bit	ON, OFF	Lower bit of data received from the servo amplifier
ABS data 1	i_AbsBit1	Bit	ON, OFF	Upper bit of data received from the servo amplifier
Transmission data ready	i_TrDataComplete	Bit	ON: Ready OFF: Preparing	A ready signal from the servo amplifier

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Absolute position restoration request complete	FB_OK	Bit	OFF	When ON, it indicates that absolute position restoration request is completed.
Servo ON signal	o_ServoON	Bit	OFF	While ON, the servo ON signal is ON.
ABS transmission mode	o_AbsTrMode	Bit	OFF	While ON, the servo amplifier is in the ABS transmission mode.

Name (Comment)	Label name	Data type	Initial value	Description
ABS request flag	o_AbsRequest	Bit	OFF	While ON, ABS data is requested.
ABS error	o_AbsNG	Bit	OFF	When ON, it indicates that absolute position restoration is completed abnormally.
ABS error code	o_AbsErrorCode	Word	0	Return an absolute position restoration command error code. For error codes, refer to MELSEC-L LD75P/LD75D positioning module user's manual or MELSEC-Q QD75P/QD75D positioning module user's manual, and check and take a countermeasure against the error.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2010/08/06	First edition
1.01B	2012/03/26	Solved the problem that causes the OPERATION ERROR (error code: 4101) when using an index register number that is used by the FB.

Note

This chapter includes information related to the M+D75_ABRST function block.

It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all the relevant manuals.

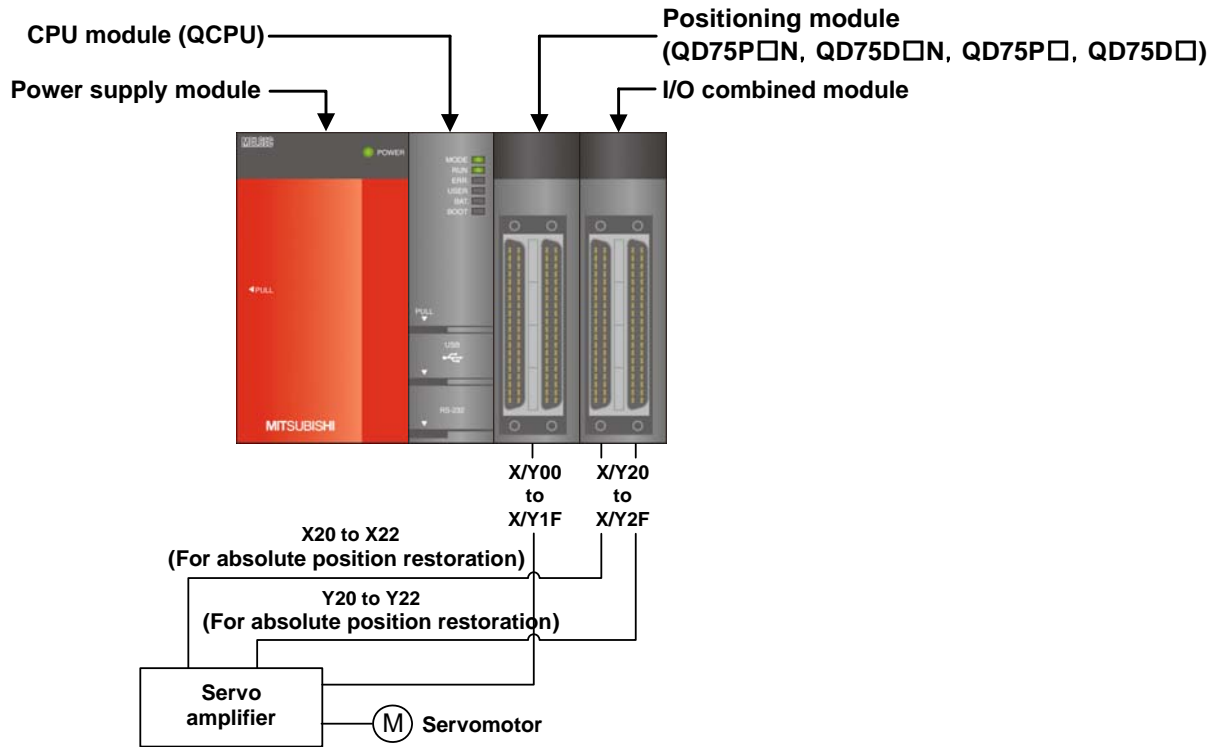
Appendix 1. FB Library Application Examples

D75FB Application examples are as follows.

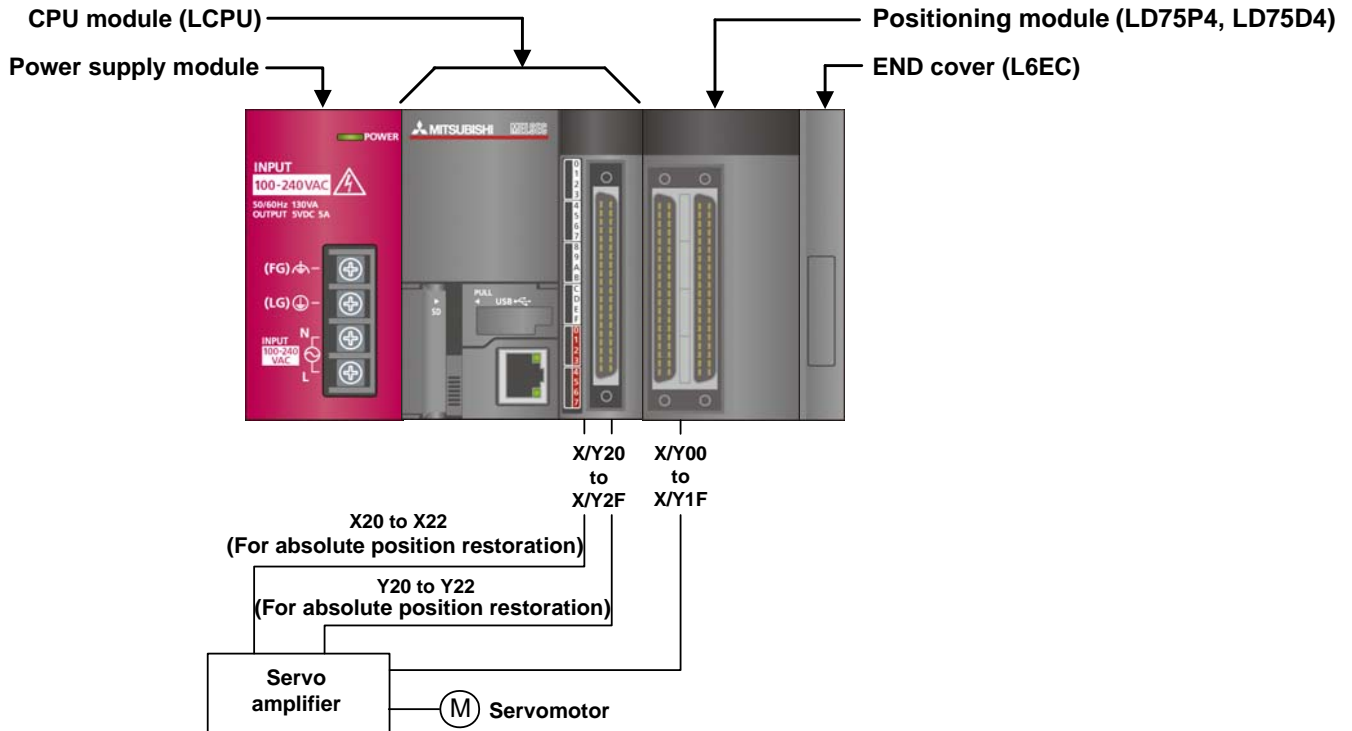
System Configuration Examples

I/O signals are allocated as shown in the figure below. Q series and L series have the same allocation.

(1) Q series system configuration example



(2) L series system configuration example



Reminder

- 1) Every input must be provided with a value for proper FB operation.
If not set, the values will be unspecified.
- 2) Abbreviations may be used in the label comments due to the limitation on the number of the characters to display in GX Works2.

List of devices

External input (commands)

Device	FB function name	Application(ON details)
M0	Basic parameters 1 setting	BParam 1 setting request
M10	Basic parameters 2 setting	BParam 2 setting request
M20	Detailed parameters 1 setting	DParam 1 setting request
M30	Detailed parameters 2 setting	DParam 2 setting request
M40	OPR basic parameters setting	ZBParam setting request
M50	OPR detailed parameters setting	ZDParam setting request
M60	Positioning data setting	Positioning data setting request
M70	PLC ready signal ON	PLC ready signal ON condition judgment
M71		PLC ready signal ON request
M80	Positioning start	Positioning start request
M90	JOG/inching operation	JOG operation start request
M91		Forward run JOG start
M92		Reverse run JOG start
M100	Manual pulse generator operation	MPG start request
M110	Speed change	Speed change request
M120	Override	Override command
M130	Acceleration/deceleration time setting value change	Acc/Dec time change command
M131		Acc/Dec time change enable flag
M140	Target position change	Target position change command
M150	Restart	Restart command
M160	Error operation	Error operation FB start
M161		Error reset request
M170	Parameter initialization	Parameter initialization command
M180	Flash ROM writing	Flash ROM writing request
M190	Absolute position restoration	ABS restoration start request
X20		ABS data0('H'/L')
X21		ABS data1('H'/L')
X22		Transmission data ready

Data register

Device	FB function name	Application(ON details)
D0	Basic parameters 1 setting	BParam 1 setting FB error code
D10	Basic parameters 2 setting	BParam 2 setting FB error code
D20	Detailed parameters 1 setting	DParam 1 setting FB error code
D30	Detailed parameters 2 setting	DParam 2 setting FB error code
D40	OPR basic parameters setting	ZBParam setting FB error code
D50	OPR detailed parameters setting	ZDParam setting FB error code
D60	Positioning data setting	Positioning setting error code
D70	Positioning start	Positioning start FB error code
D80	JOG/inching operation	JOG operation FB error code
D90	Manual pulse generator operation	MPG operation FB error code
D100	Speed change	Speed change FB error code
D110	Override	Override FB error code
D120	Acceleration/deceleration time setting value change	Acc/Dec time change error code
D130	Target position change	Target position change err code
D140	Restart	Restart FB error code
D150	Error operation	Error code designated axis
D151		Warning code designated axis
D152		Error operation FB error code
D160	Absolute position restoration	ABS error code
D161		ABS restoration FB error code

External output (checks)

Device	FB function name	Application(ON details)
M1	Basic parameters 1 setting	BParam 1 setting ready
M2		BParam 1 setting complete
F0		BParam 1 setting FB error
M11	Basic parameters 2 setting	BParam 2 setting ready
M12		BParam 2 setting complete
F5		BParam 2 setting FB error
M21	Detailed parameters 1 setting	DParam 1 setting ready
M22		DParam 1 setting complete
F10	Detailed parameters 2 setting	DParam 1 setting FB error
M31		DParam 2 setting ready
M32		DParam 2 setting complete
F15	OPR basic parameters setting	DParam 2 setting FB error
M41		ZBParam setting ready
M42	OPR detailed parameters setting	ZBParam setting complete
F20		ZBParam setting FB error
M51	OPR detailed parameters setting	ZDParam setting ready
M52		ZDParam setting complete
F25		ZDParam setting FB error
M61	Positioning data setting	Positioning data setting ready
M62		Positioning data setting comp
F30		Positioning setting FB error
M72	PLC ready signal ON	PLC ready signal ON ready
M73		PLC ready signal ON complete
M81	Positioning start	Positioning start ready
M82		Execution complete
F35		Positioning start FB error
M93	JOG/inching operation	JOG operation FB ready
M94		Operation started
F40		JOG operation FB error
M101	Manual pulse generator operation	MPG operation ready
M102		MPG enable complete
F45		MPG operation FB error
M111	Speed change	Speed change ready
M112		Speed change request complete
F50		Speed change FB error
M121	Override	Override ready
M122		Override value setting complete
F55		Override FB error
M132	Acceleration/deceleration time setting value change	Acc/Dec time change ready
M133		Acc/Dec time change request
F60		Acc/Dec time change FB error
M141	Target position change	Target position change ready
M142		Target position change request
F65		Target position change FB error
M151	Restart	Restart ready
M152		Restart acceptance complete
F70		Restart FB error
M162	Error operation	Error reset ready
M163		Error reset complete
M164		Axis error detection
M165		Axis warning detection
F75		Error operation FB error
M171	Parameter initialization	Parameter initialization ready
M172		Parameter initialization comp
M181	Flash ROM writing	Flash ROM writing ready
M182		Flash ROM writing complete
M191	Absolute position restoration	ABS restoration ready
M192		ABS restoration request complete
M193		ABS error
Y20		Servo ON signal
Y21	ABS transmission mode	ABS transmission mode
Y22		ABS request flag
F80		ABS restoration FB error

Program

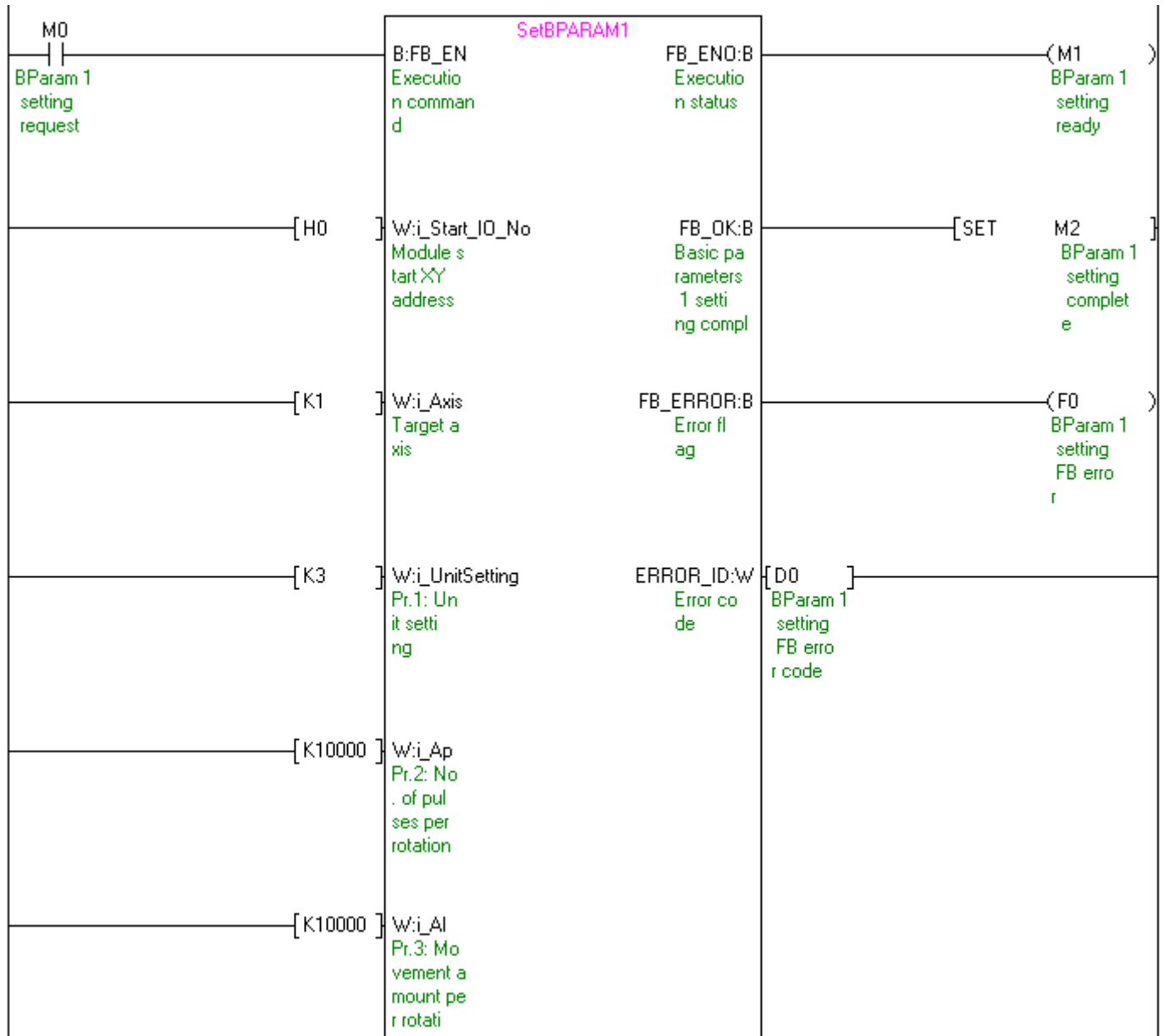
M+D75_SetBPARAM1 (Basic parameters 1 setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_UnitSetting	K3	Set the unit setting to pulse.
i_Ap	K10000	Set the No. of pulses per rotation to 10,000.
i_Al	K10000	Set the movement amount per rotation to 10,000.
i_Am	K1	Set the unit magnification to 1-fold.
i_PlsOutputMode	K0	Set the pulse output mode to PULSE/SIGN mode.
i_Rotation	K0	Set the rotation direction setting to "Current value increment with forward run pulse output".
i_BiasSpeed	K100	Set the bias speed at start to 100.

By turning ON M0, the basic parameters 1 values for axis 1 are written to the buffer memory.

*It is recommended to use GX Configurator-QP or the configuration function of GX Works 2 to perform module initialization such as parameter setting. In this case, using this FB is unnecessary.

*The basic parameter 1 setting complete (M2) contact is used for PLC ready signal ON FB (M+D75_CPUReady).



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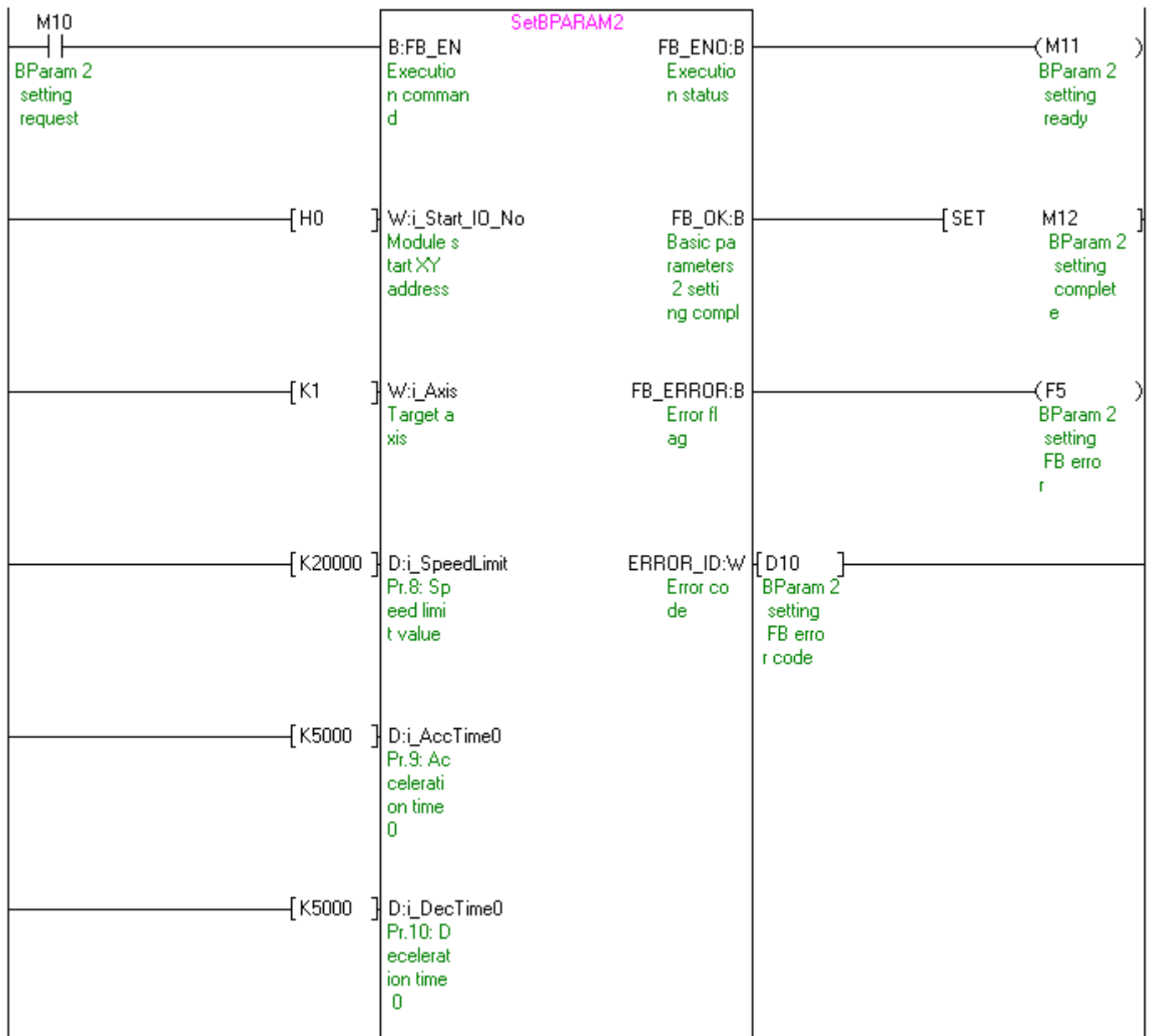
[K1]	W:i_Am Pr.4: Un it magni fication
[K0]	W:i_PlsOutputMode Pr.5: Pu lse outp ut mode
[K0]	W:i_Rotation Pr.6: Ro tation d irection setting
[K100]	D:i_BiasSpeed Pr.7: Bi as speed at star t

M+D75_SetBPARAM2 (Basic parameters 2 setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_SpeedLimit	K20000	Set the speed limit value to 20,000.
i_AccTime0	K5000	Set the acceleration time 0 to 5,000.
i_DecTime0	K5000	Set the deceleration time 0 to 5,000.

By turning ON M10, the basic parameters 2 values for axis 1 are written to the buffer memory.

*It is recommended to use GX Configurator-QP or the configuration function of GX Works 2 to perform module initialization such as parameter setting. In this case, using this FB is unnecessary.



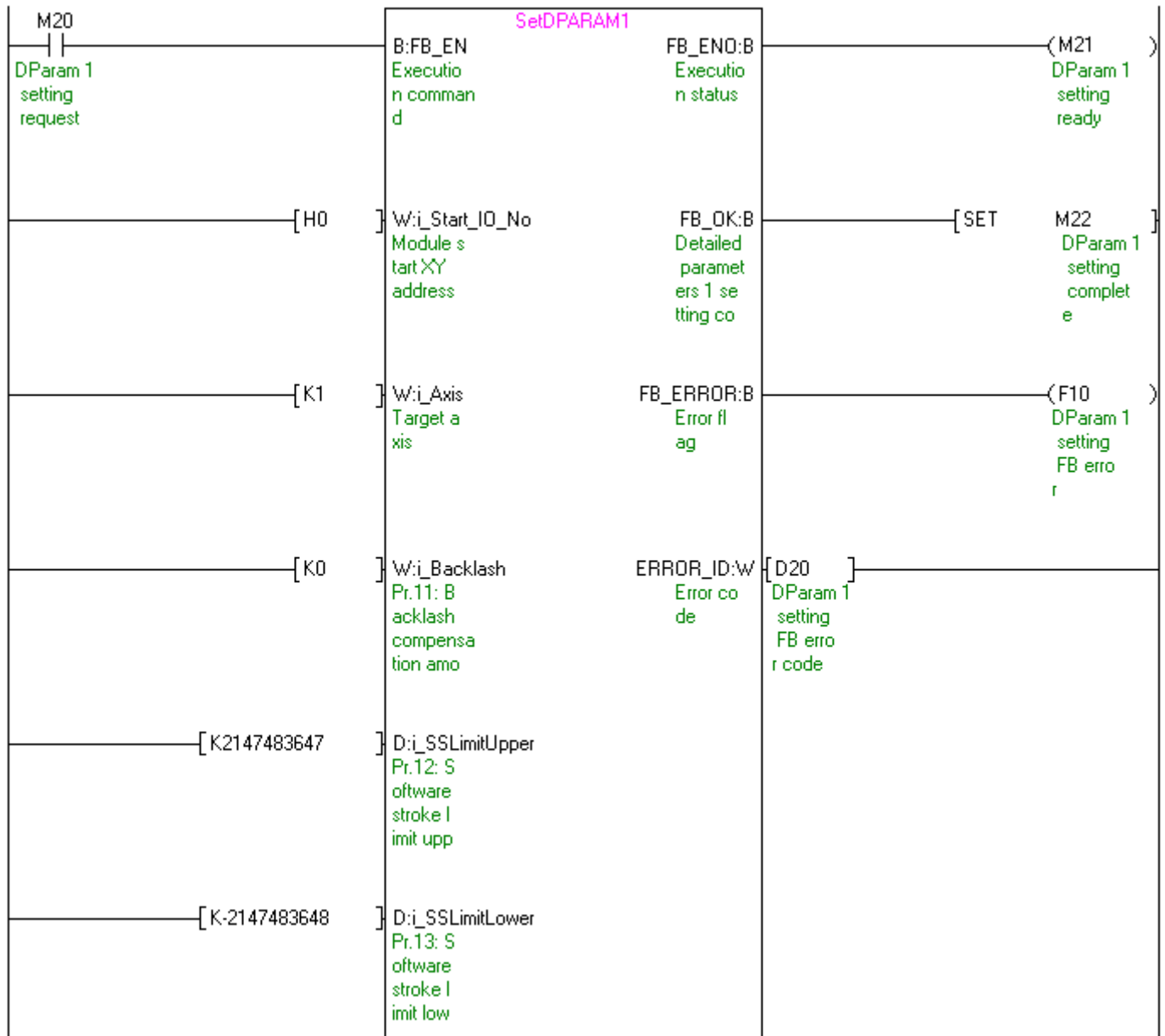
M+D75_SetDPARAM1 (Detailed parameters 1 setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_Backlash	K0	Set the backlash compensation amount to 0.
i_SSLimitUpper	K2147483647	Set the software stroke limit upper limit value to 2,147,483,647.
i_SSLimitLower	K-2147483648	Set the software stroke limit lower limit value to -2,147,483,648.
i_SSLimitSelect	K0	Set the software stroke limit selection to "Apply software stroke limit on current feed value".
i_SSLimitSetting	K0	Set the software stroke limit valid/invalid setting to "Software stroke limit valid during JOG operation, inching operation, and manual pulse generator operation".
i_InPosition	K100	Set the command in-position width to 100.
i_TorqueLimit	K100	Set the torque limit setting value to 100%.
i_MCodeTiming	K0	Set the M code ON signal output timing to "WITH mode".
i_SpeedSwMode	K0	Set the speed switching mode to "Standard speed switching mode".
i_InterpolSpeed	K0	Set the interpolation speed designation method to "Composite speed".
i_SpeedCntValue	K1	Set the current feed value during speed control to "Update current feed value".
i_InputSigLogic	H0	Set the all input signals to negative logic.
i_OutputSigLogic	H0	Set the all output signals to negative logic.
i_MPGInputSelect	K0	Set the manual pulse generator input selection to "A-phase/B-phase; multiplied by 4".
i_SPFuncSelect	K0	Set the speed-position function selection to "Speed-positioning switching control (INC mode)".

By turning ON M20, the detailed parameters 1 values for axis 1 are written to the buffer memory.

*It is recommended to use GX Configurator-QP or the configuration function of GX Works 2 to perform module initialization such as parameter setting. In this case, using this FB is unnecessary.

*The detailed parameters 1 setting complete (M22) contact is used for PLC ready signal ON FB (M+D75_CPUReady).



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[K0]	W:i_SSLimitSelect Pr.14: Software stroke limit sel
[K0]	W:i_SSLimitSetting Pr.15: Software stroke limit val
[K100]	D:i_InPosition Pr.16: Command in-position width
[K100]	W:i_TorqueLimit Pr.17: Torque limit setting valu
[K0]	W:i_MCodeTiming Pr.18: M code ON signal output t
[K0]	W:i_SpeedSwMode Pr.19: Speed switching mode

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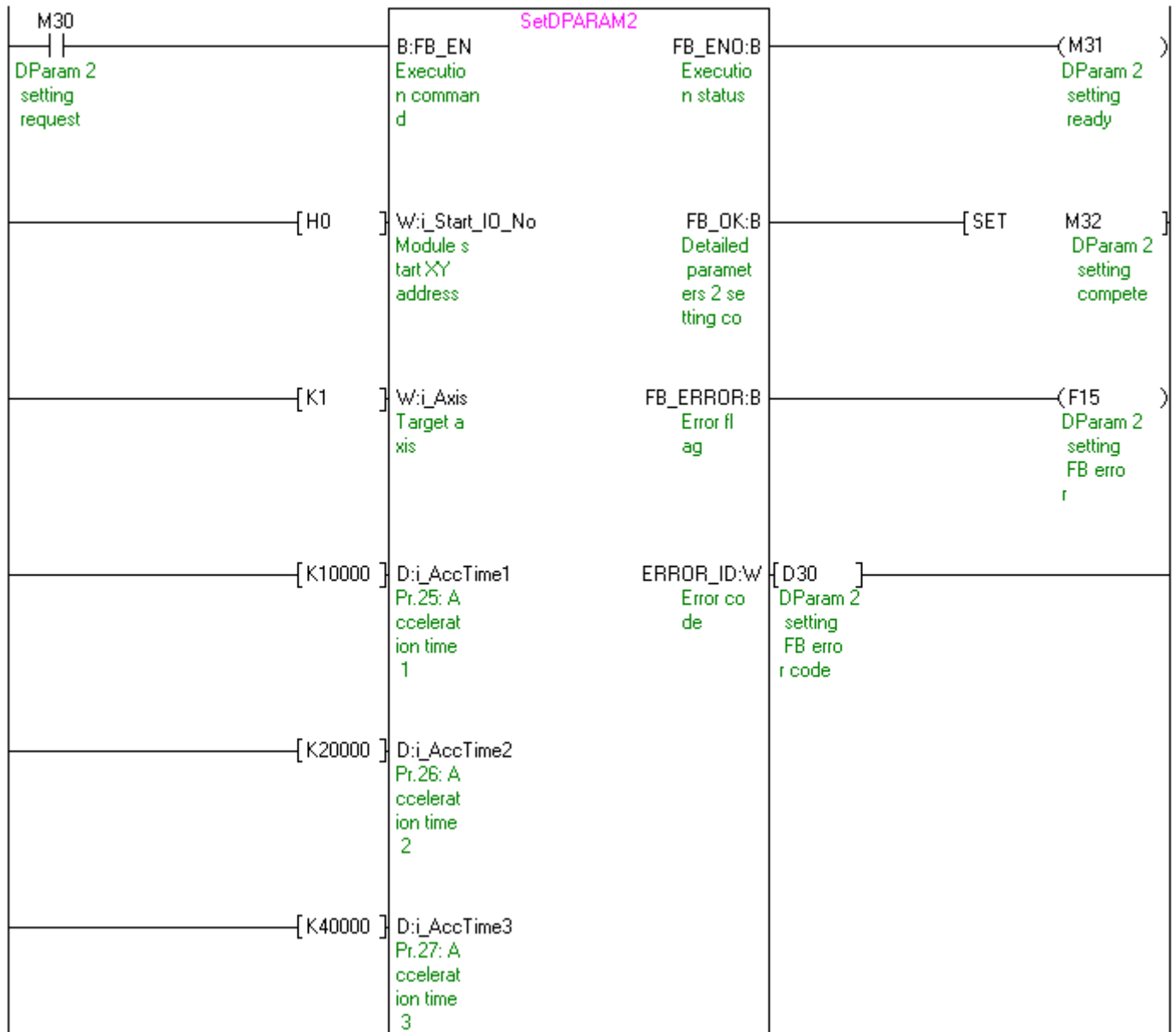
[K0]	W:i_InterpolSpeed Pr.20: I nterpol ation spe ed desig
[K1]	W:i_SpeedCntValue Pr.21: C urrent f eed valu e during
[H0]	W:i_InputSigLogic Pr.22: I nput sig nal logi c select
[H0]	W:i_OutputSigLogic Pr.23: O utput si gnal log ic selec
[K0]	W:i_MPGInputSelect Pr.24: M anual pu lse gene rator in
[K0]	W:i_SPFuncSelect Pr.150: Speed-po sition f unction

M+D75_SetDPARAM2 (Detailed parameters 2 setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_AccTime1	K10000	Set the acceleration time 1 to 10,000.
i_AccTime2	K20000	Set the acceleration time 2 to 20,000.
i_AccTime3	K40000	Set the acceleration time 3 to 40,000.
i_DecTime1	K10000	Set the deceleration time 1 to 10,000.
i_DecTime2	K20000	Set the deceleration time 2 to 20,000.
i_DecTime3	K40000	Set the deceleration time 3 to 40,000.
i_JogSpeedLimit	K10000	Set the JOG speed limit value to 10,000.
i_JogAccTimeSel	K0	Set the JOG operation acceleration time selection to "Acceleration time 0".
i_JogDecTimeSel	K0	Set the JOG operation deceleration time selection to "Deceleration time 0".
i_AccDecProcess	K0	Set the acceleration/deceleration process selection to "Trapezoid acceleration/deceleration process".
i_S_curveRatio	K50	Set the S-curve ratio to 50%.
i_SuddenStopTime	K1000	Set the sudden stop deceleration time to 1,000.
i_StopGroup1	K0	Set the stop group 1 sudden stop selection to "Normal deceleration stop".
i_StopGroup2	K0	Set the stop group 2 sudden stop selection to "Normal deceleration stop".
i_StopGroup3	K0	Set the stop group 3 sudden stop selection to "Normal deceleration stop".
i_PosiCmpSignal	K100	Set the positioning complete signal output time to 100.
i_ArcErrPermit	K1000	Set the allowable circular interpolation error width to 1,000.
i_ExtComFuncSel	K0	Set the external command function selection to "External positioning start".

By turning ON M30, the detailed parameters 2 values for axis 1 are written to the buffer memory.

*It is recommended to use GX Configurator-QP or the configuration function of GX Works 2 to perform module initialization such as parameter setting. In this case, using this FB is unnecessary.



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[K10000]	D:i_DecTime1 Pr.28: D ecelerat ion time 1
[K20000]	D:i_DecTime2 Pr.29: D ecelerat ion time 2
[K40000]	D:i_DecTime3 Pr.30: D ecelerat ion time 3
[K10000]	D:i_JogSpeedLimit Pr.31: J OG speed limit v alue
[K0]	W:i_JogAccTimeSel Pr.32: J OG opera tion acc eleratio
[K0]	W:i_JogDecTimeSel Pr.33: J OG opera tion dec eleratio

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[K0]	W:i_AccDecProcess Pr.34: A ccelerat ion/dece leration
[K50]	W:i_S_curveRatio Pr.35: S -curve r atio
[K1000]	D:i_SuddenStopTime Pr.36: S udden st op decel eration
[K0]	W:i_StopGroup1 Pr.37: S top grou p 1 sudd en stop
[K0]	W:i_StopGroup2 Pr.38: S top grou p 2 sudd en stop
[K0]	W:i_StopGroup3 Pr.39: S top grou p 3 sudd en stop

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[K100]	W:i_PosiCmpSignal Pr.40: P ositioni ng compl ete sign
[K1000]	D:i_ArcErrPermit Pr.41: A llowable circula r interp
[K0]	W:i_ExtComFuncSel Pr.42: E xternal command function

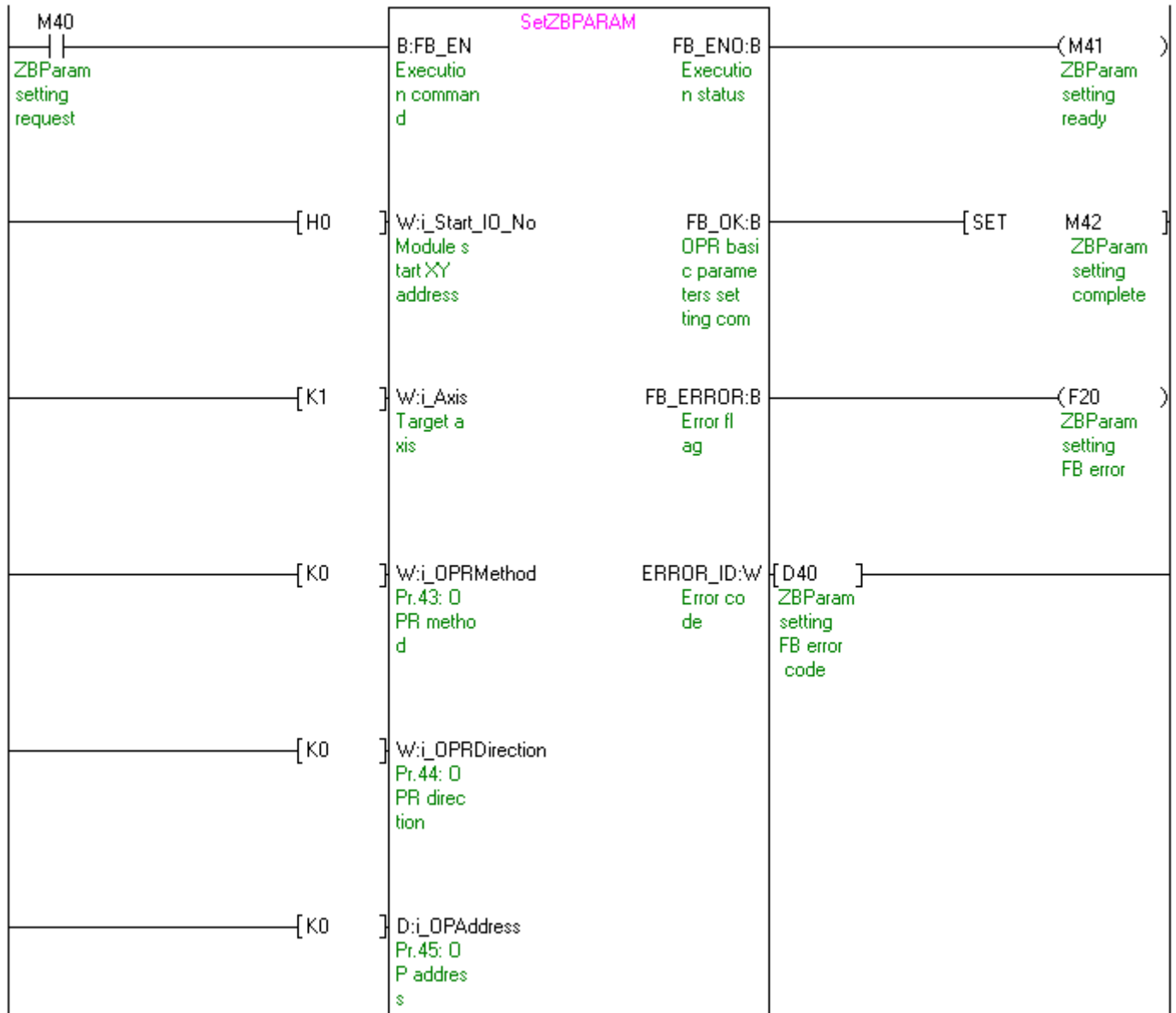
M+D75_SetZPARAM (OPR basic parameters setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_OPRMethod	K0	Set the OPR method to "Near-point dog method".
i_OPRDirection	K0	Set the OPR direction to "Positive direction (address increment direction)".
i_OPAddress	K0	Set the OP address to 0.
i_OPRSpeed	K20000	Set the OPR speed to 20,000.
i_CreepSpeed	K1000	Set the creep speed to 1,000.
i_OPRRetry	K1	Set the OPR retry to "Retry OPR with limit switch."

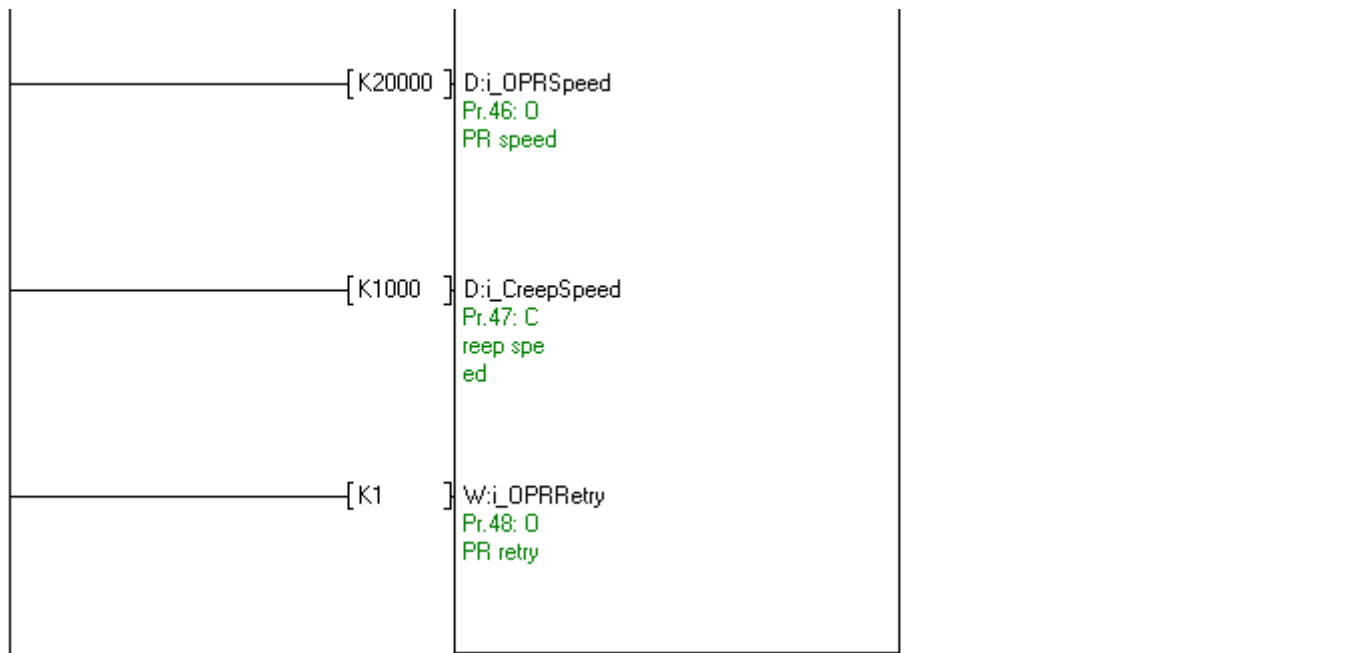
By turning ON M40, the OPR basic parameters setting values for axis 1 are written to the buffer memory.

*It is recommended to use GX Configurator-QP or the configuration function of GX Works 2 to perform module initialization such as parameter setting. In this case, using this FB is unnecessary.

*The OPR parameters setting complete (M42) contact is used for PLC ready signal ON FB (M+D75_CPUReady).



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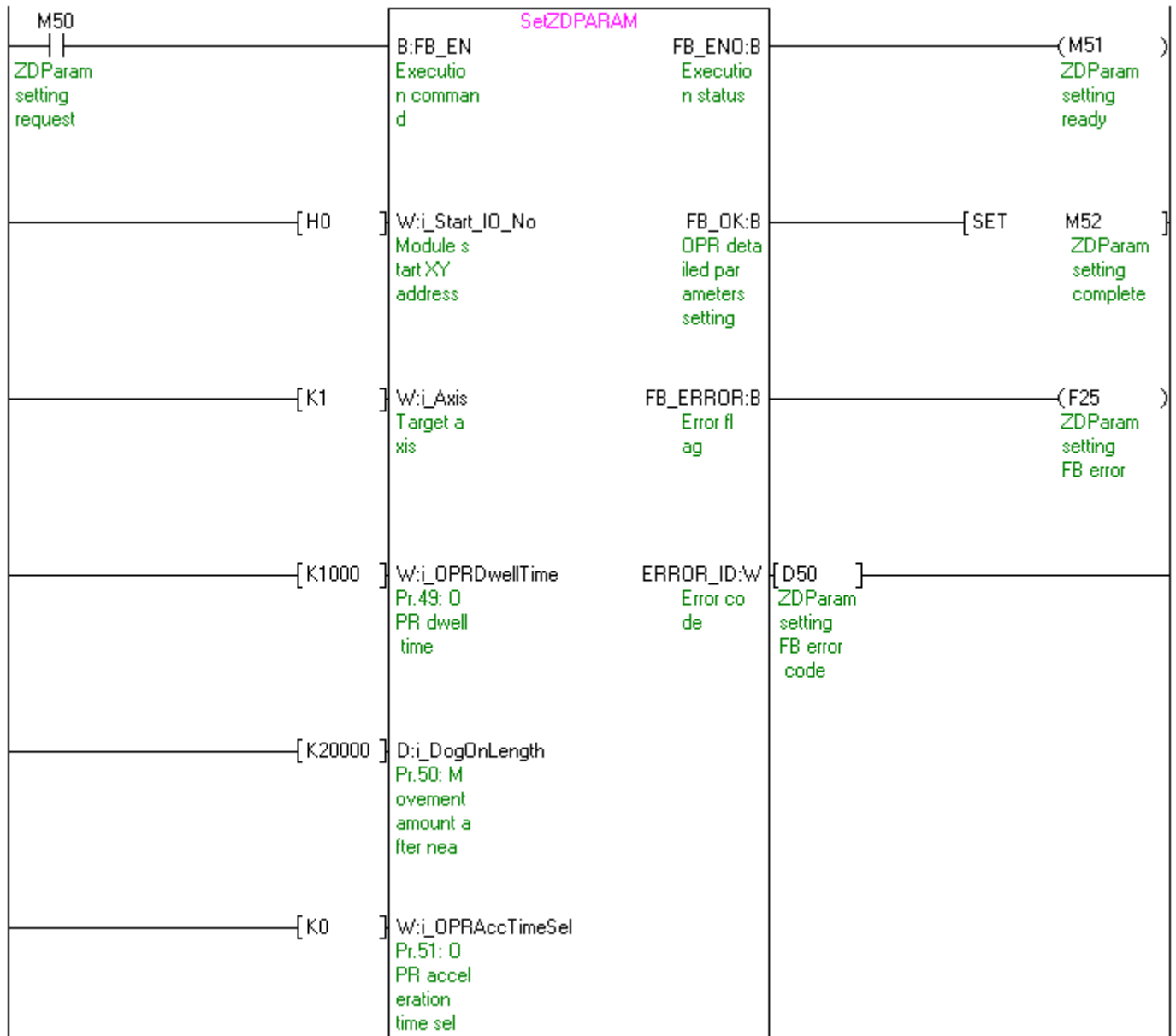
M+D75_SetZDPARAM (OPR detailed parameters setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_OPRDwellTime	K1000	Set the OPR dwell time to 1,000.
i_DogOnLength	K20000	Set the movement amount after near-point dog ON to 20,000.
i_OPRAccTimeSel	K0	Set the OPR acceleration time selection to "Acceleration time 0".
i_OPRDecTimeSel	K1	Set the OPR deceleration time selection to "Deceleration time 1".
i_OPShift	K0	Set the OP shift amount to 0.
i_OPRTorqueLim	K100	Set the OPR torque limit value to 100%.
i_DevCntClr	K11	Set the deviation counter clear signal output time to 11.
i_ShiftSpeed	K0	Set the Speed designation during OP shift to "OPR speed".
i_OPRRetryDwell	K100	Set the dwell time during OPR retry to 100.

By turning ON M50, the OPR detailed parameters setting values for axis 1 are written to the buffer memory.

*It is recommended to use GX Configurator-QP or the configuration function of GX Works 2 to perform module initialization such as parameter setting. In this case, using this FB is unnecessary.

*The OPR detailed parameters setting complete (M52) contact is used for PLC ready signal ON FB (M+D75_CPUReady).



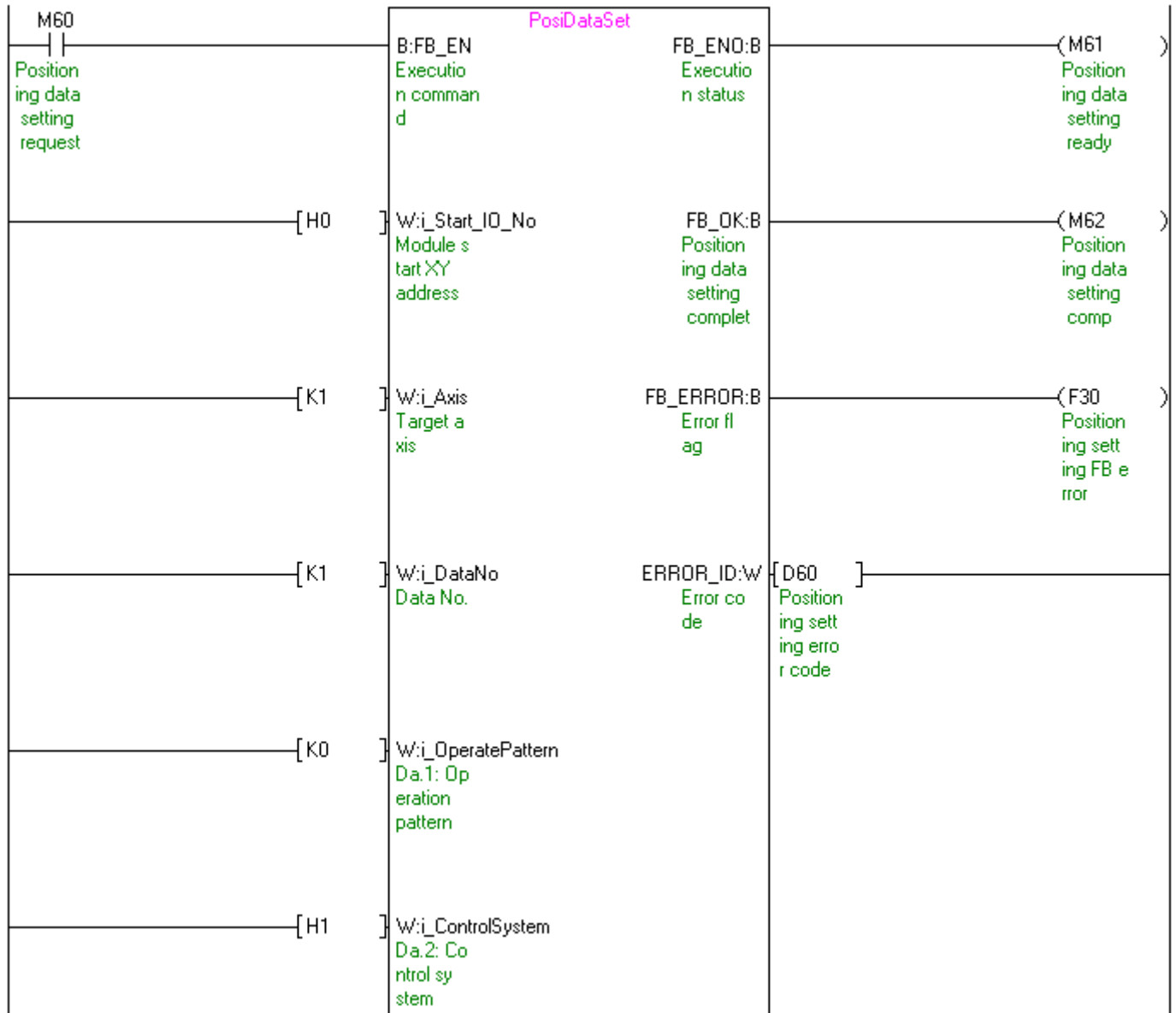
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[K1]	W:i_OPRDecTimeSel Pr.52: 0 PR decel eration time sel
[K0]	D:i_OPShift Pr.53: 0 P shift amount
[K100]	W:i_OPRTorqueLim Pr.54: 0 PR torqu e limit value
[K11]	W:i_DevCntClr Pr.55: 0 eviation counter clear s
[K0]	W:i_ShiftSpeed Pr.56: 0 peed des ignation during
[K100]	W:i_OPRRetryDwell Pr.57: 0 well tim e during OPR ret

M+D75_PosiParamSet (Positioning data setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_DataNo	K1	Set the positioning data No. to 1.
i_OperatePattern	K0	Set the operation pattern to "Positioning complete".
i_ControlSystem	H1	Set the control system to "ABS1 1-axis linear control (ABS)".
i_AccTimeNo	K0	Set the acceleration time No. to "Acceleration time 0".
i_DecTimeNo	K0	Set the deceleration time No. to Deceleration time 0.
i_InterpolatedAx	K0	Set the axis to be interpolated to "Axis 1".
i_Mcode	K0	Set the M code to 0.
i_DwellTime	K0	Set the dwell time to 0.
i_CommandSpeed	K10000	Set the command speed to 10,000.
i_PosiParam	K300000	Set the position/movement amount to 300,000.
i_ArcParam	K0	Set the arc address to 0.

By turning ON M60, the positioning data setting for axis 1 is written to the buffer memory.



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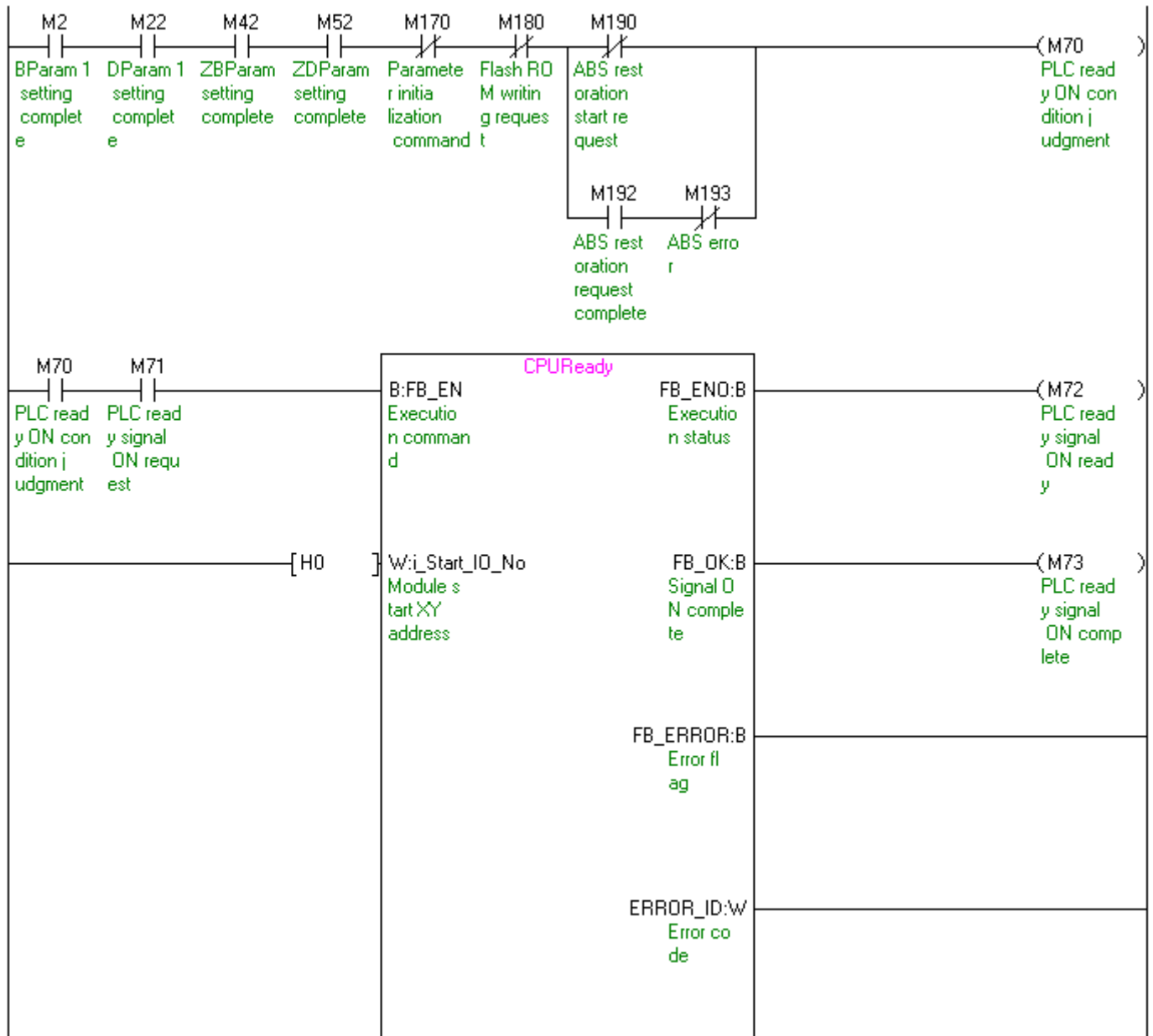
[K0]	W:i_AccTimeNo Da.3: Acceleration time No.
[K0]	W:i_DecTimeNo Da.4: Deceleration time No.
[K0]	W:i_InterpolatedAx Da.5: Axis to be interpolated
[K0]	W:i_Mcode Da.10: M code
[K0]	W:i_DwellTime Da.9: Dwell time
[K10000]	D:i_CommandSpeed Da.8: Command speed
[K300000]	D:i_PosAddr Da.6: Positioning address
[K0]	D:i_ArcAddr Da.7: Arc address

M+D75_CPUReady (PLC ready signal ON)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.

By turning ON M71 while M70 is ON, the PLC ready signal is turned ON.

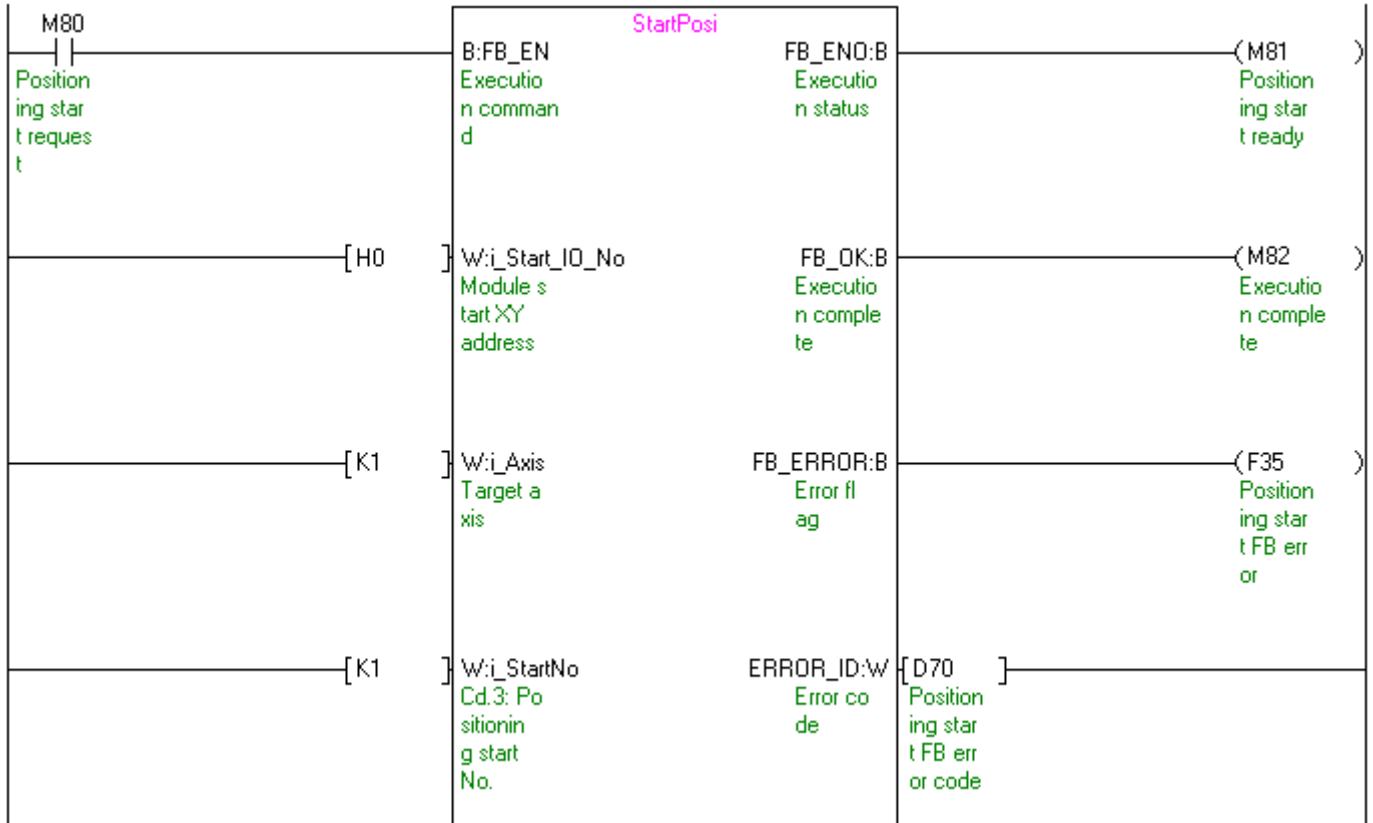
*Contacts of M2, M22, M42 and M52 are not required if initial parameters are set not with the parameter setting FB but with GX Configurator-QP or the configuration function of GX Works 2.



M+D75_StartPosi (Positioning start)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_StartNo	K1	Set the positioning start No. to "Positioning data No.1".

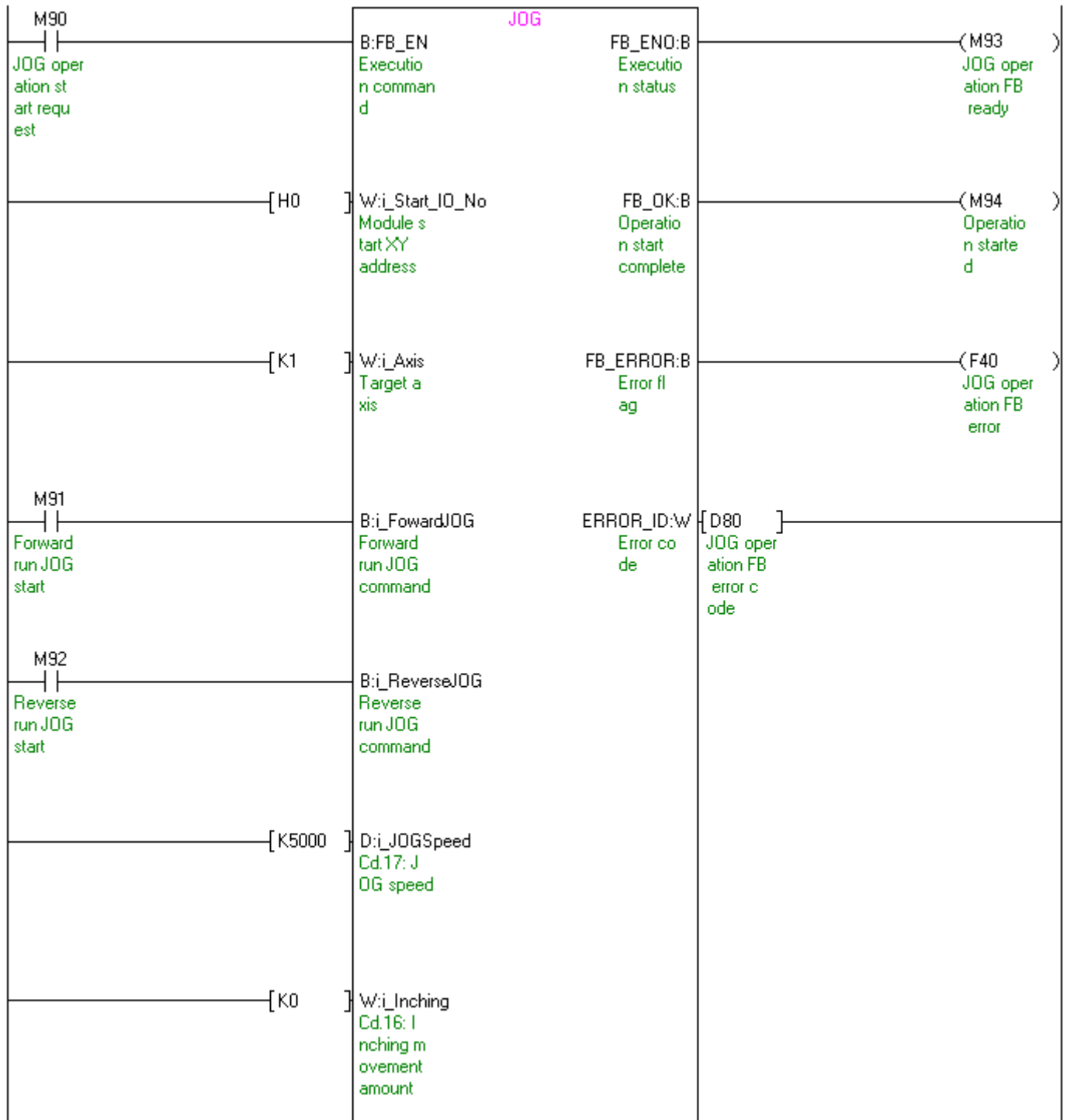
By turning ON M80, the positioning start number for axis 1 is written to the buffer memory.



M+D75_JOG (JOG/inching operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_FowardJOG	ON/OFF	Turn ON this parameter to start the forward run JOG.
i_ReverseJOG	ON/OFF	Turn ON this parameter to start the reverse run JOG.
i_JOGSpeed	K5000	Set the JOG speed to 5,000.
i_Inching	K0	Set the inching movement amount to 0.

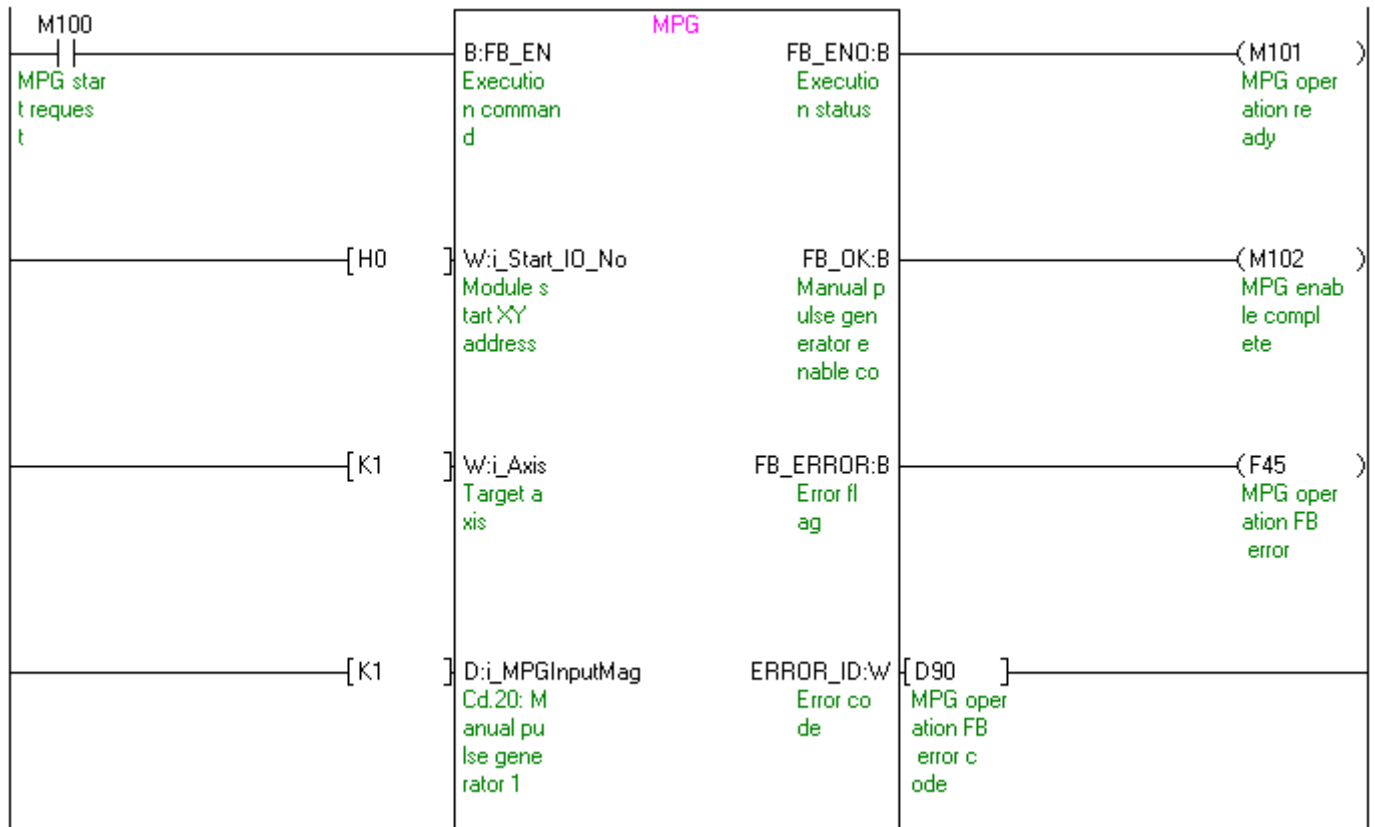
After turning ON M90, the forward run JOG is started by turning ON M91 and the reverse run JOG is started by turning ON M92.



M+D75_MPG (Manual pulse generator operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_MPGInputMag	K1	Set the manual pulse generator 1 pulse input magnification to 1.

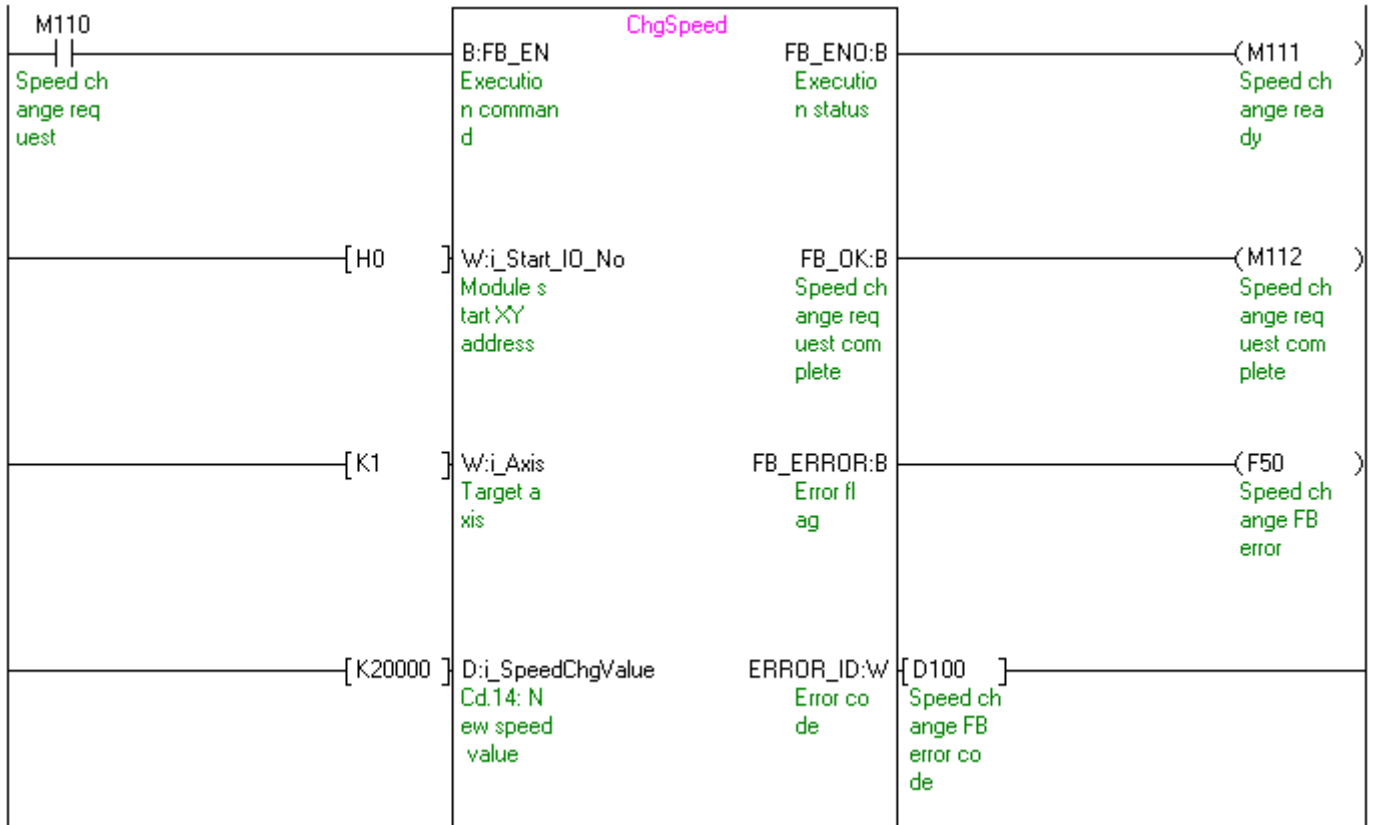
By turning ON M100, the manual pulse generator 1 pulse input magnification for axis 1 is written to the buffer memory and the manual pulse generator operation is enabled.



M+D75_ChgSpeed (Speed change)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_SpeedChgValue	K20000	Set the new speed value to 20,000.

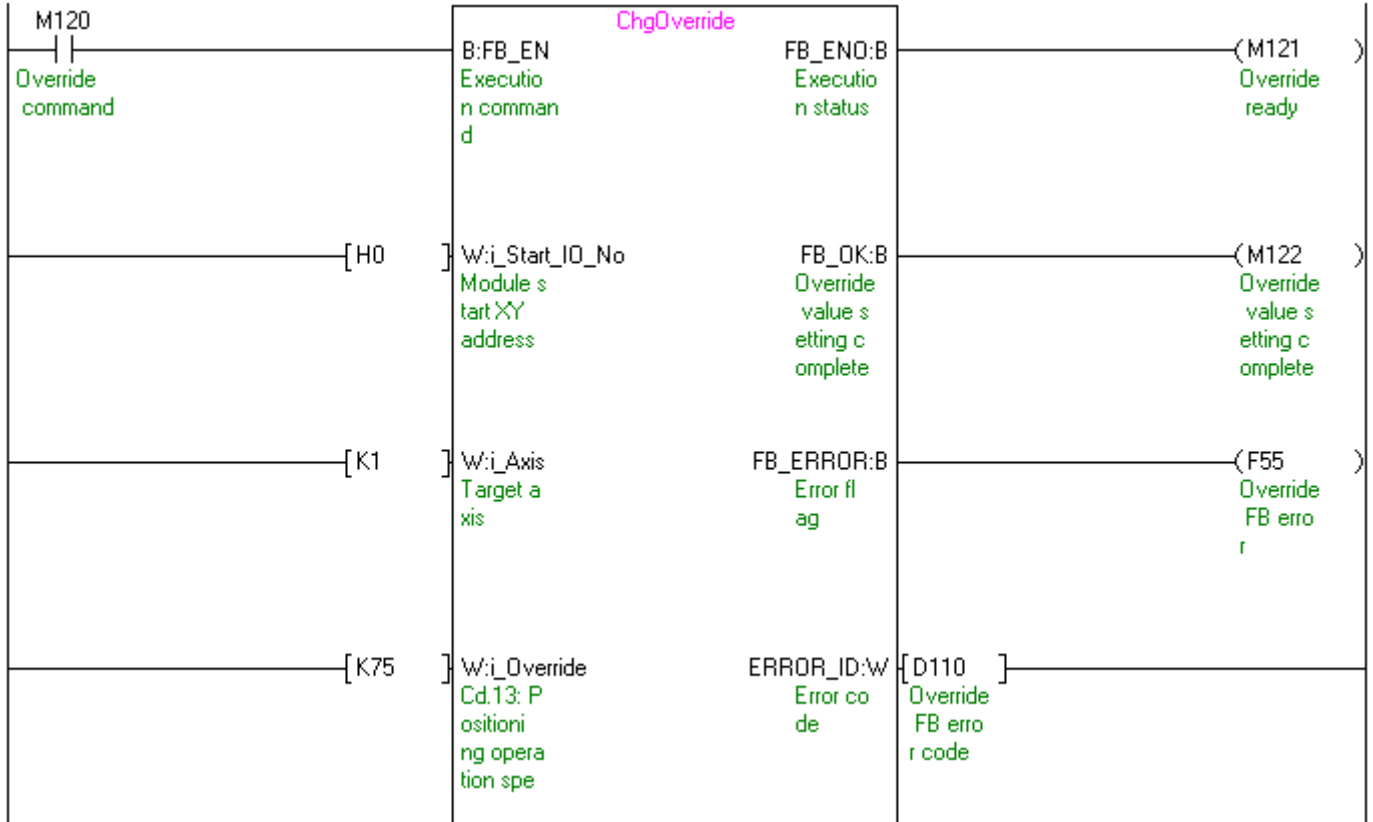
By turning ON M110, the speed for axis 1 that is being controlled is changed to the value set with the new speed value.



M+D75_ChgOverride (Override)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_Override	K75	Set the positioning operation speed override to 75%.

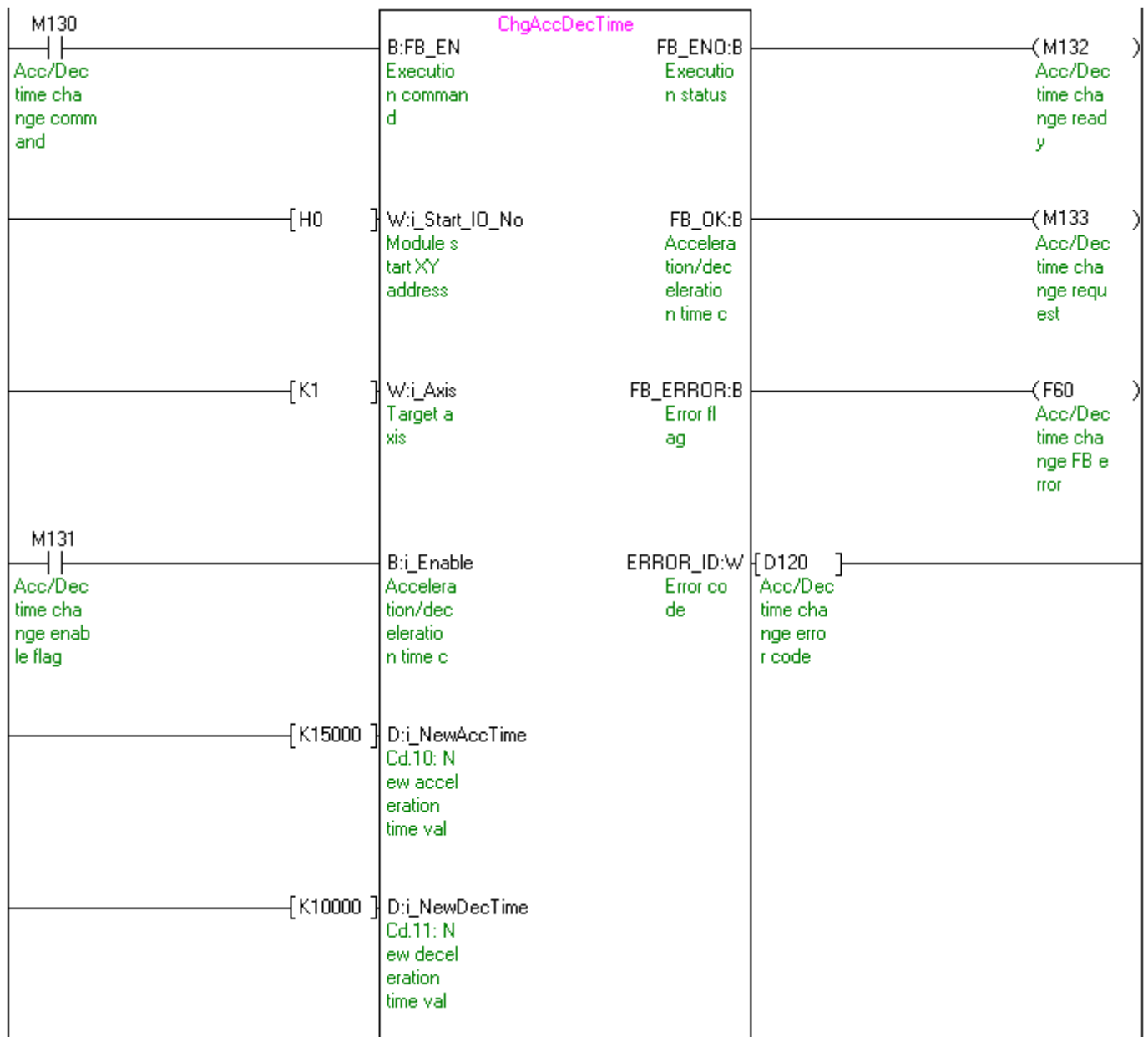
By turning ON M120, the positioning operation speed override for axis 1 is written to the buffer memory.



M+D75_ChgAccDecTime (Acceleration/deceleration time setting value change)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_Enable	ON/OFF	Turn ON this parameter to set acceleration/ deceleration time change enable flag to "Enabled".
i_NewAccTime	K15000	Set the new acceleration time value to 15,000.
i_NewDecTime	K10000	Set the new deceleration time value to 10,000.

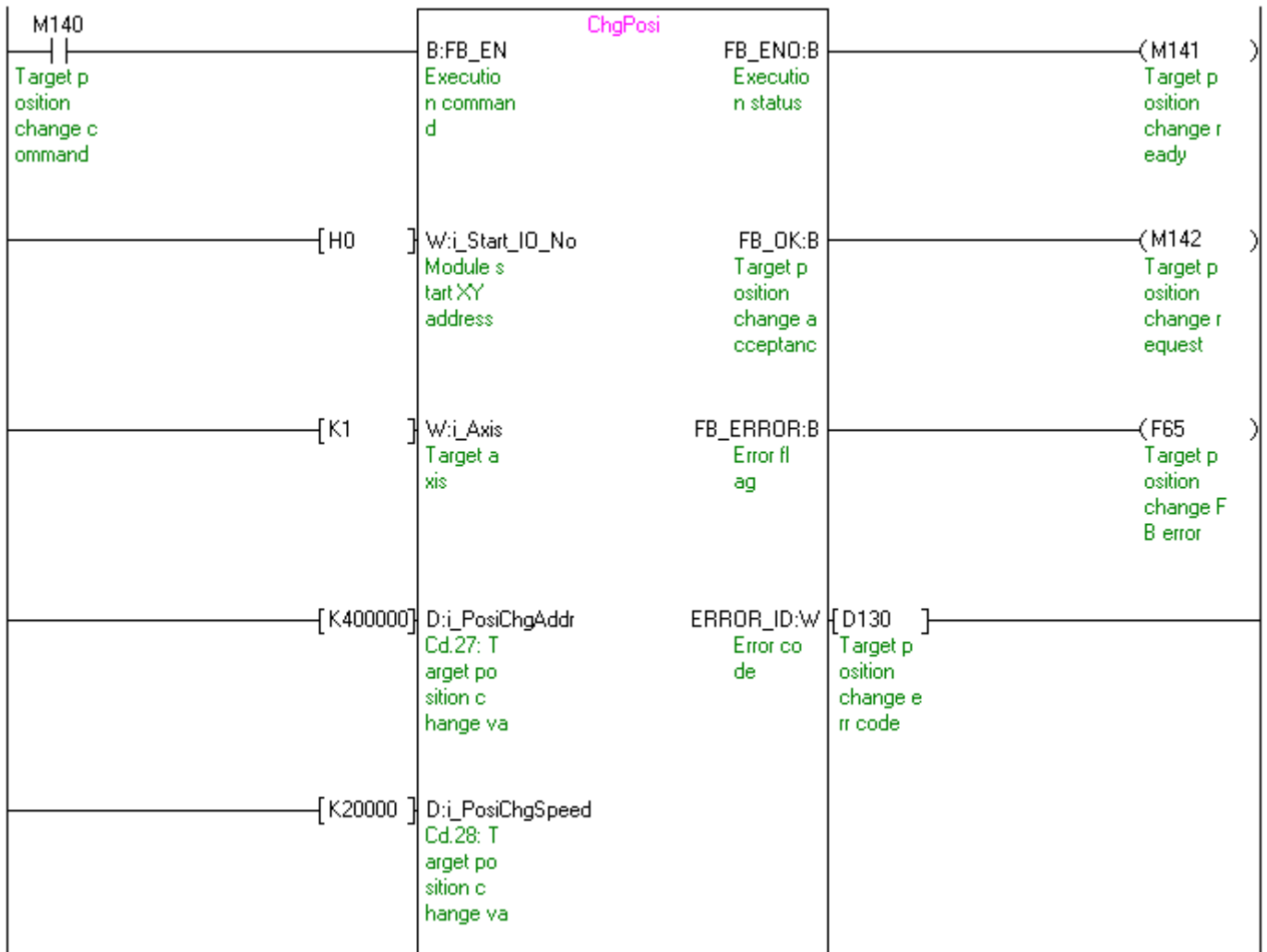
By turning ON M130, the new acceleration time value and new deceleration time value for axis 1 are written to the buffer memory. By turning ON M131, the acceleration/deceleration time change during speed change is enabled.



M+D75_ChgPosi (Target position change)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_PosichgAddr	K400000	Set the target position change value (new address) to 400,000.
i_PosichgSpeed	K20000	Set the target position change value (new speed) to 20,000.

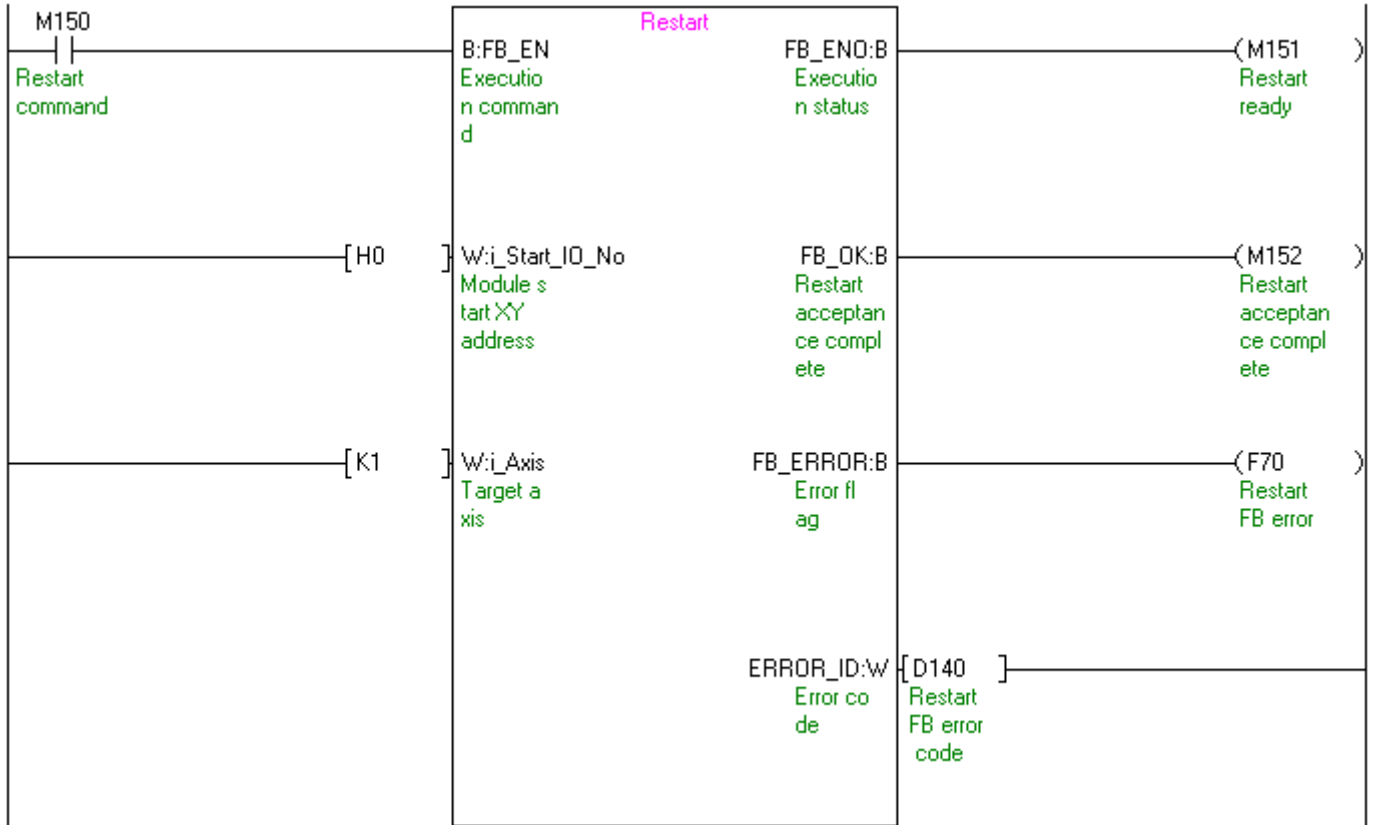
By turning ON M140, the target position change value (new address) and target position change value (new speed) for axis 1 are written to the buffer memory and the target position is changed.



M+D75_Restart (Restart)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.

By turning ON M150, the positioning operation for axis 1 that stopped when a stop cause has occurred restarts.

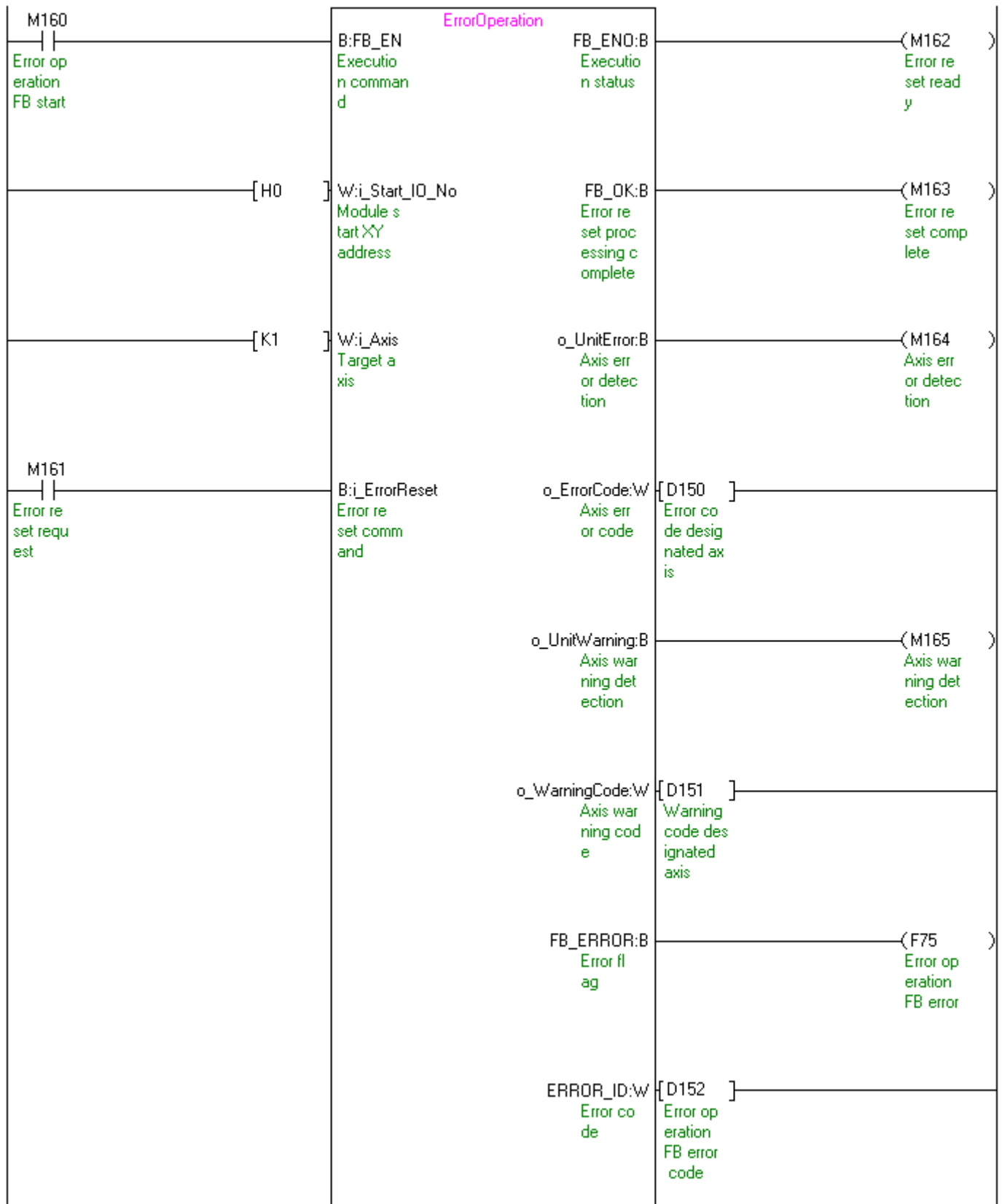


M+D75_ErrorOperation (Error operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.
i_ErrorReset	ON/OFF	Turn ON this parameter to perform an error reset.

By turning ON M160, the error code is output if an error occurs and the warning code is output if a warning occurs.

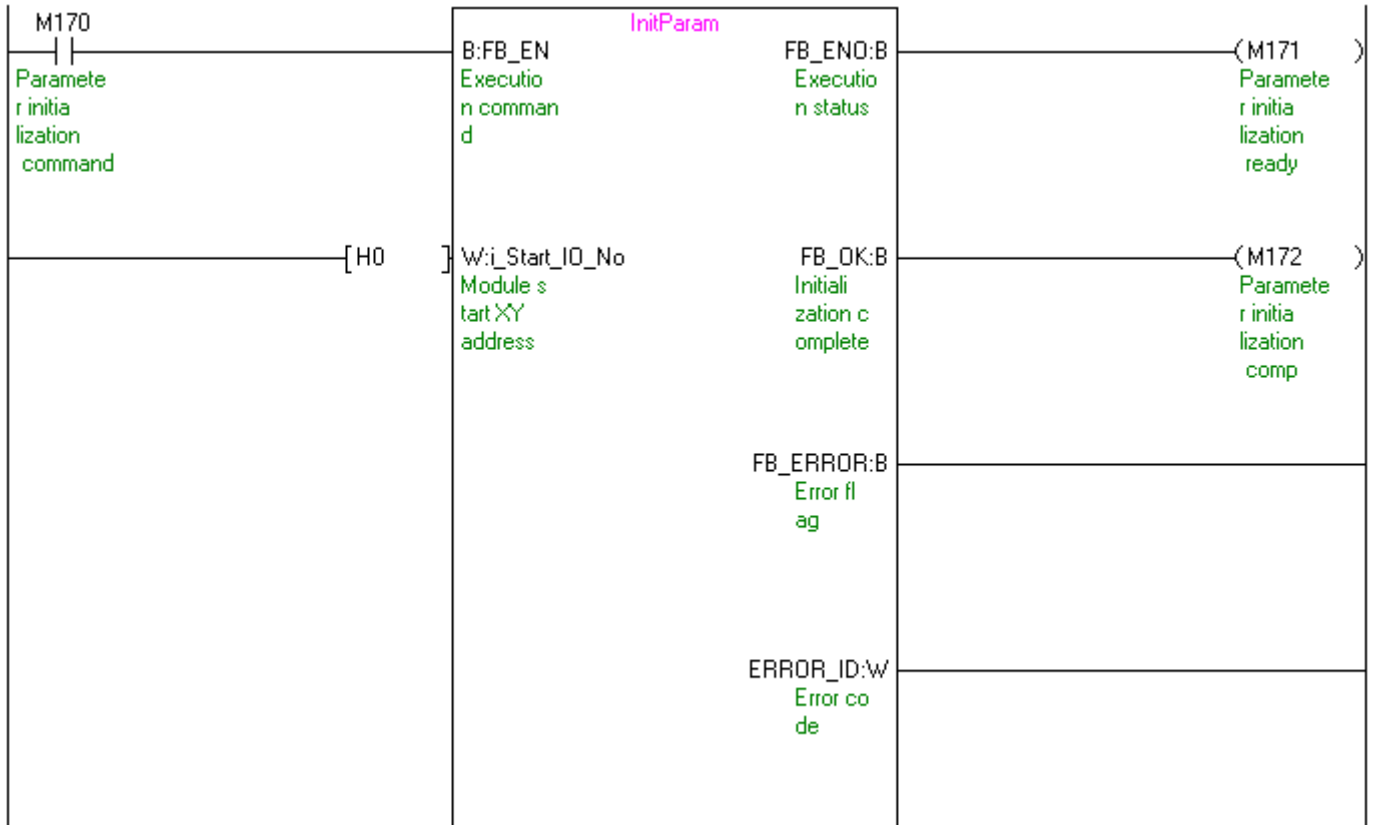
After an error output is performed, by turning ON M161, an error reset is performed.



M+D75_InitParam (Parameter initialization)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.

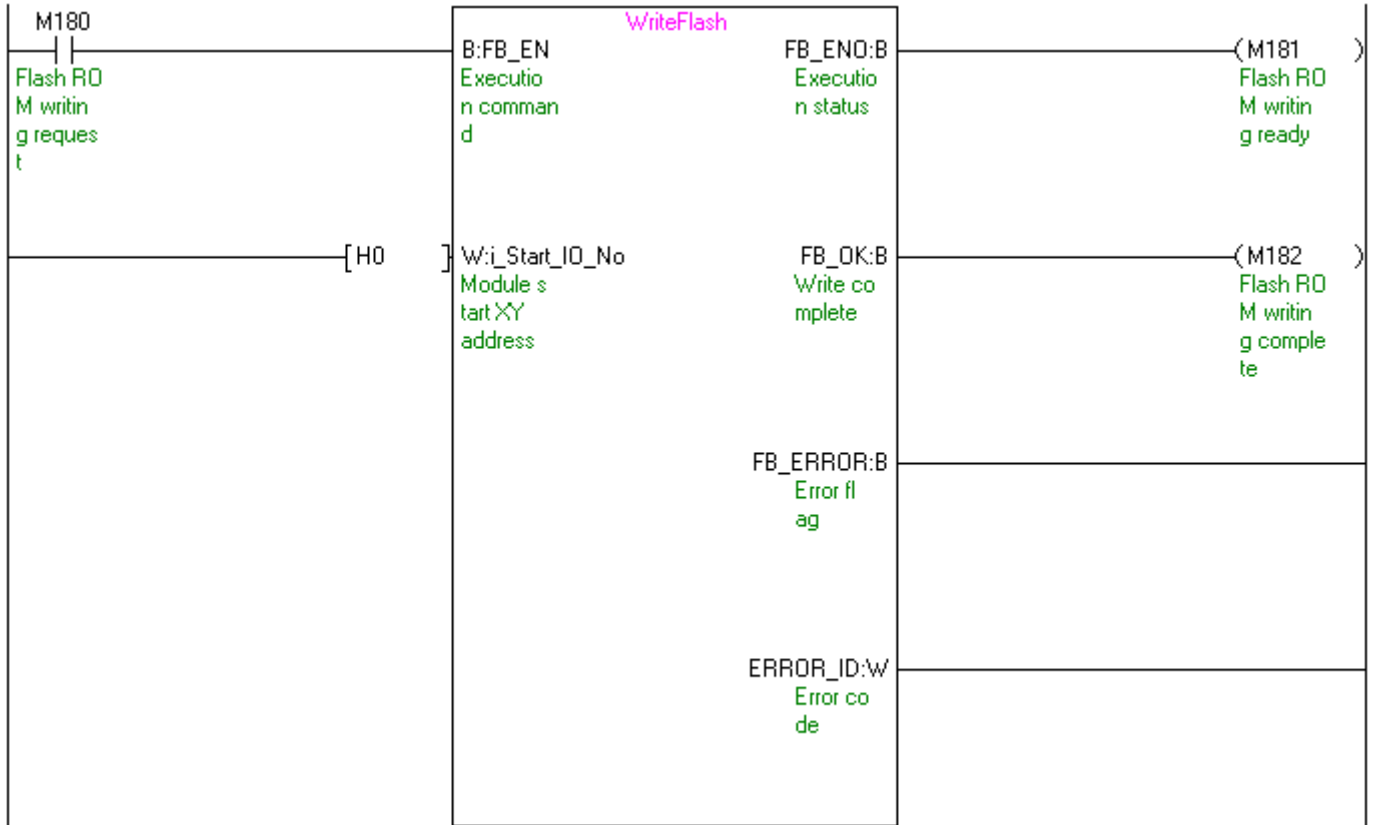
By turning ON M170, the setting data that is stored in the buffer memory and flash ROM are returned to the factory-set initial value.



M+D75_WriteFlash (Flash ROM writing)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.

By turning ON M180, the data set in the buffer memory is written to the flash ROM.

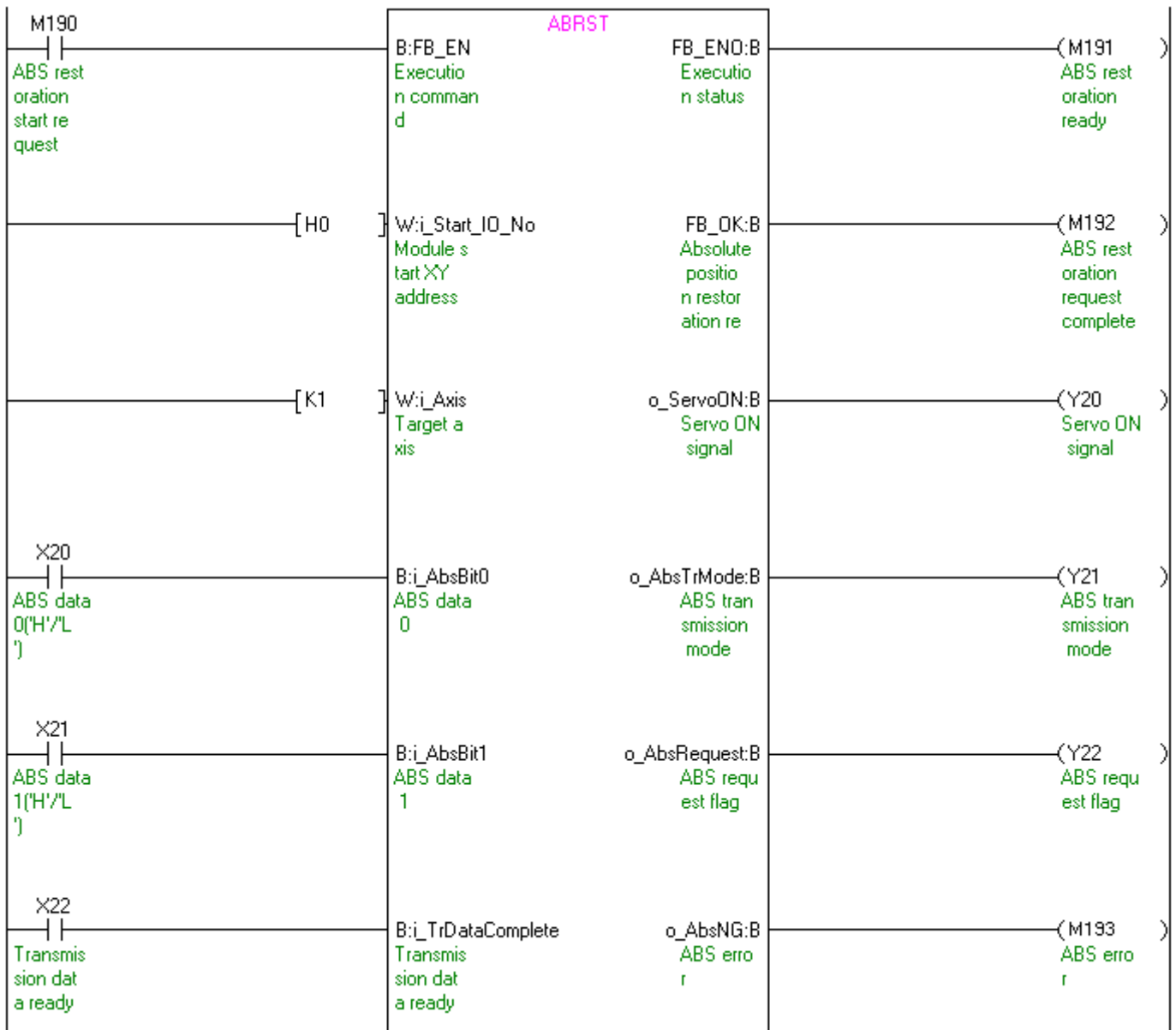


M+D75_ABRST (Absolute position restoration)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the D75 module is mounted to 0H.
i_Axis	K1	Set the target axis to channel 1.

By turning ON M190, the absolute position is restored.

*After completion of absolute position restoration, M190 must remain turned ON.



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