QD70 FB Library Reference Manual

<CONTENTS>

Reference Manual Revision History

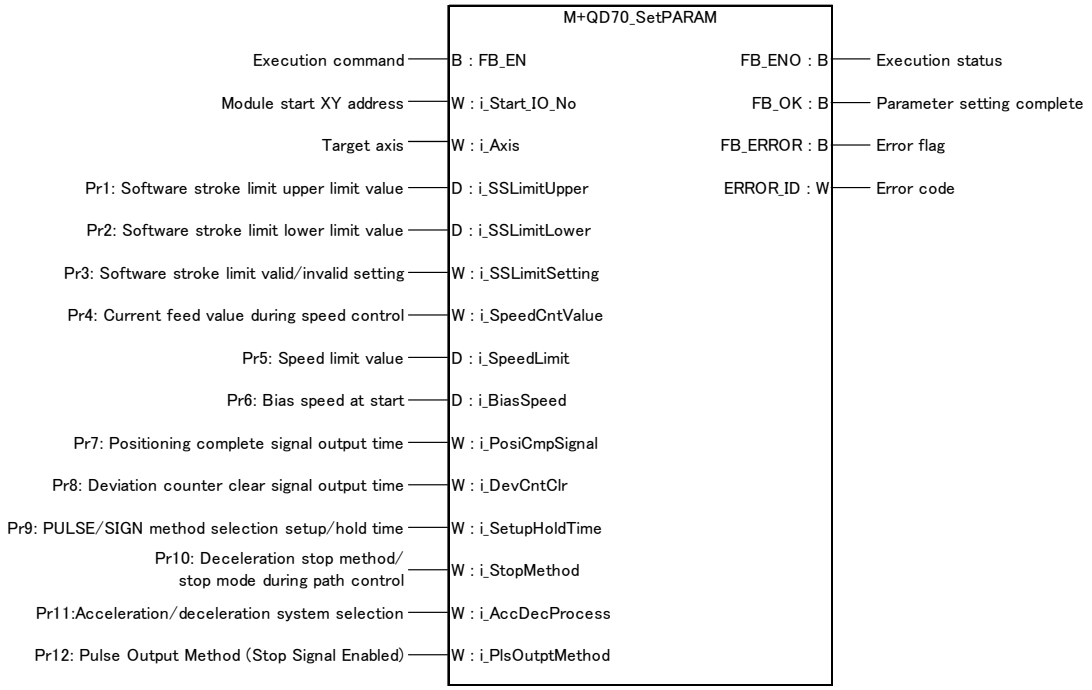
Reference Manual Number	Date	Description
FBM-M044-A	2011/02/18	First edition

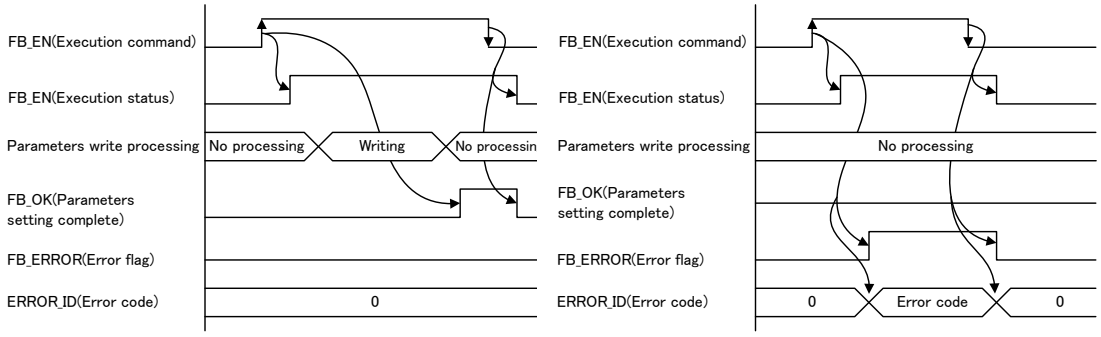
1.M+QD70_SetPARAM (Parameter setting)

FB Name

M+QD70_SetPARAM

Function Overview

Item	Description
Function overview	Sets parameters (QD70P: Pr1 to Pr10/QD70D: Pr1 to Pr12).
Symbol	
Applicable hardware and software	Compatible hardware: QD70P(4/8), QD70D(4/8) Hardware details Q series: Basic model / High performance model / Universal model *Not applicable for QCPU (A mode) Compatible software: GX Works2 Ver1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 295* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).

Item	Description
Function description	1) By turning ON FB_EN (Execution command), the set parameter 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 (Y signal) 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	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 parameters are set using GX Configurator-PT or the configuration function of GX Works 2, using this FB is unnecessary. 8) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to Appendix 1 - Application examples.
Timing chart	[When operation completes without error] [When an error occurs] 
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error Codes

■Error code list

Error codes	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting.

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.
Pr1: Software stroke limit upper limit value	i_SSLimitUpper	D	-2,147,483,648~ 2,147,483,647 (pulse)	Set the upper limit for the machine's movement range.
Pr2: Software stroke limit lower limit value	i_SSLimitLower	D		Set the lower limit for the machine's movement range.
Pr3: Software stroke limit valid/invalid setting	i_SSLimitSetting	W	0: Valid 1: Invalid	Set whether to validate the software stroke limit.
Pr4: Current feed value during speed control	i_SpeedCntValue	W	0: No update 1: Update 2: Clear to 0 and no update	Specify whether to enable or disable the update of the current feed value while operations are performed under the speed control of the speed-position switching control.

Name	Variable name	Data type	Setting range	Description
Pr5: Speed limit value	i_SpeedLimit	D	QD70P: 1~200,000 (pulse/s) QD70D: 1~4,000,000 (pulse/s)	Set the maximum speed during OPR control, positioning control and JOG operation.
Pr6: Bias speed at start	i_BiasSpeed	D	QD70P: 0~200,000 (pulse/s) QD70D: 0~4,000,000 (pulse/s)	Set the minimum speed upon starting OPR control, positioning control and JOG operation.
Pr7: Positioning complete signal output time	i_PosiCmpSignal	W	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.
Pr8: Deviation counter clear signal output time	i_DevCntClr	W	1~32 (ms)	Set the duration of the deviation counter clear signal output during a machine OPR control using any of the following methods: the near-point dog method, stopper 1 to 3, and count 1.
Pr9: PULSE/SIGN method selection setup/hold time	i_SetupHoldTime	W	0: 10 μs 1: 100 μs 2: 1 ms 3: 2 ms	Set the setup/hold time when PULSE/SIGN is selected in the pulse output mode to output inverted pulses.

Name	Variable name	Data type	Setting range	Description
Pr10: Deceleration stop method/stop mode during path control	i_StopMethod	W	0: Position match stop 1: Deceleration stop	QD70P: Stop mode during path control Set how to stop the operation by an axis stop signal input when "Continuous path control" is selected for the "Operation pattern" of positioning control. QD70D: Deceleration stop method Set how to stop the operation when an axis stop signal is input during position control including the one in the speed-position switching control.
Pr11:Acceleration/deceleration system selection	i_AccDecProcess	W	0: Trapezoidal acceleration/deceleration 1: S-curve acceleration/deceleration *2	Set whether to use trapezoidal acceleration/deceleration or S–curve acceleration/deceleration for the acceleration/deceleration process. *2: Set 0 for QD70P as this is not supported by QD70P.

Name	Variable name	Data type	Setting range	Description
Pr12: Pulse Output Method (Stop Signal Enabled)	i_PlsOutptMethod	W	0: Fixed pulse output 1: Fixed deceleration time *3	Select whether to continue or stop outputting the current pulse at the time the specified deceleration stop time is elapsed for the case where an axis is stopped due to a stop factor. *3: Set 0 for QD70P as this is not supported by QD70P.

■Output labels

Name	Variable name	Data type	Initial value	Description
Execution status	FB_ENO	B	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Parameter setting complete	FB_OK	B	OFF	When ON, it indicates that the parameter setting is completed.
Error flag	FB_ERROR	B	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	W	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

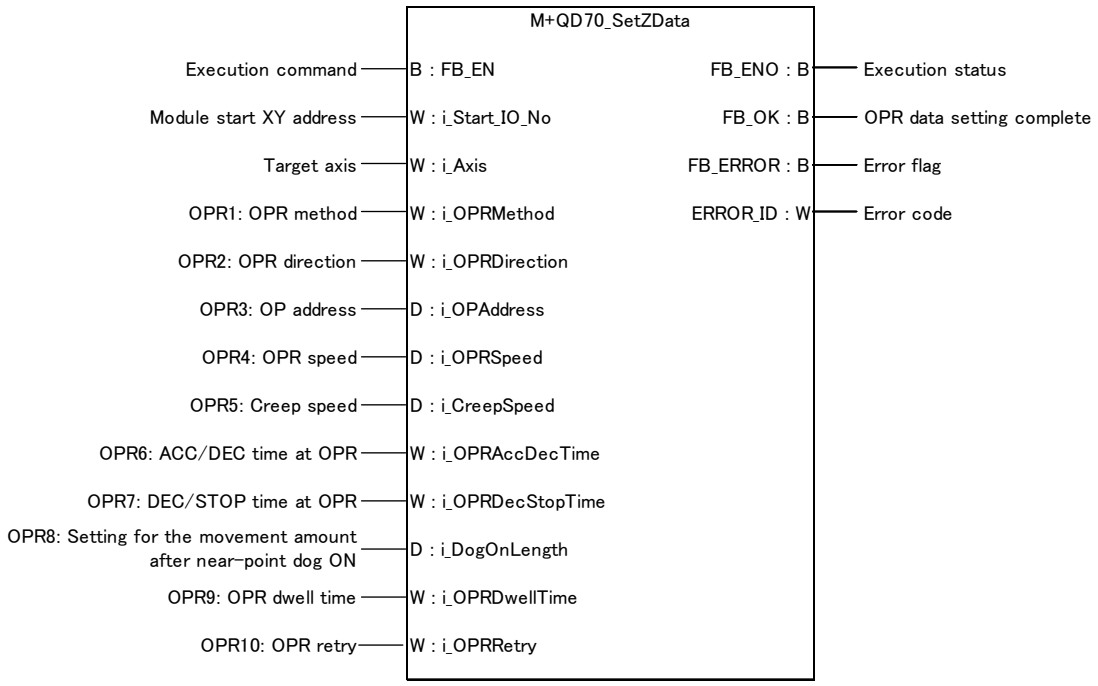
This chapter includes information related to the M+QD70_SetPARAM function block.
It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

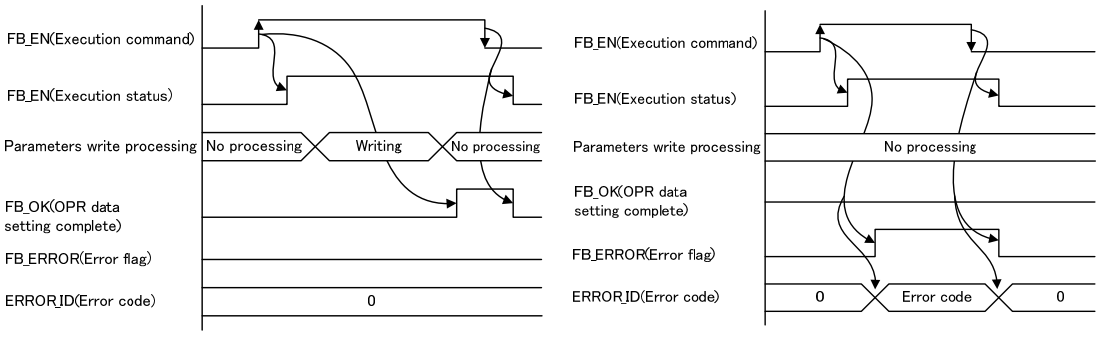
2.M+QD70_SetZData (OPR data setting)

FB Name

M+QD70_SetZData

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Sets OPR data (QD70P: OPR.1 to OPR.9/QD70D: OPR.1 to OPR.10).</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td>Applicable hardware and software</td><td>Compatible hardware: QD70P(4/8), QD70D(4/8)
Hardware details
<table>
<tr><td rowspan="3">Q series</td><td>Basic model</td></tr>
<tr><td>High performance model</td></tr>
<tr><td>Universal model</td></tr>
</table>
*Not applicable for QCPU (A mode)
Compatible software: GX Works2 Ver1.31H or later</td></tr>
<tr><td>Programming language</td><td>Ladder</td></tr>
<tr><td>Number of steps (maximum value)</td><td>For universal model CPU: 279*
*The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).</td></tr>
</table>

Item	Description
Function description	1) By turning ON FB_EN (Execution command), the set OPR 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) Parameters are validated when the PLC ready signal (Y signal) 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	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 parameters are set using GX Configurator-PT or the configuration function of GX Works 2, using this FB is unnecessary. 8) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to Appendix 1 - Application examples.
Timing chart	[When operation completes without error] [When an error occurs] 
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting.

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.
OPR1: OPR method	i_OPRMethod	W	0: Near-point dog method 1: Stopper 1 2: Stopper 2 3: Stopper 3 4: Count 1 5: Count 2	Set the OPR method for carrying out machine OPR.
OPR2: OPR direction	i_OPRDirection	W	0: Forward direction (Address increment direction) 1: Reverse direction (Address decrement direction)	Set the direction to start movement when starting machine OPR.
OPR3: OP address	i_OPAddress	D	-2,147,483,648~ 2,147,483,647 (pulse)	Set the address used as the reference point for positioning control (ABS system).

Name	Variable name	Data type	Setting range	Description
OPR4: OPR speed	i_OPRSpeed	D	1) QD70P: 1~200,000 (pulse/s) 2) QD70D: 1~4,000,000 (pulse/s)	Set the speed for OPR control.
OPR5: Creep speed	i_CreepSpeed	D	1) QD70P: 1~200,000 (pulse/s) 2) QD70D: 1~4,000,000 (pulse/s)	Set the creep speed after near-point dog ON.
OPR6: ACC/DEC time at OPR	i_OPRAccDecTime	W	0~32,767 (ms)	Set acceleration/deceleration time for OPR control.
OPR7: DEC/STOP time at OPR	i_OPRDecStopTime	W	0~32,767 (ms)	When the count 2 is set in the OPR method, set the time taken to make a stop by an axis stop factor (axis stop signal ON or error occurrence).
OPR8: Setting for the movement amount after near-point dog ON	i_DogOnLength	D	0~2,147,483,647 (pulse)	When the count 1 or 2 is set in the OPR method, set the movement amount to the OP after the near-point dog ON.
OPR9: OPR dwell time	i_OPRDwellTime	W	0~65,535 (ms) *1	When stopper 1 is set in the 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.

Name	Variable name	Data type	Setting range	Description
OPR10: OPR retry	i_OPRRetry	W	0: Valid 1: Invalid *2	Set whether to carry out OPR retry. *2 Set 0 for QD70P as this is not supported by QD70P.

■Output labels

Name	Variable name	Data type	Initial value	Description
Execution status	FB_ENO	B	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
OPR data setting complete	FB_OK	B	OFF	When ON, it indicates that setting of the data is completed.
Error flag	FB_ERROR	B	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	W	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

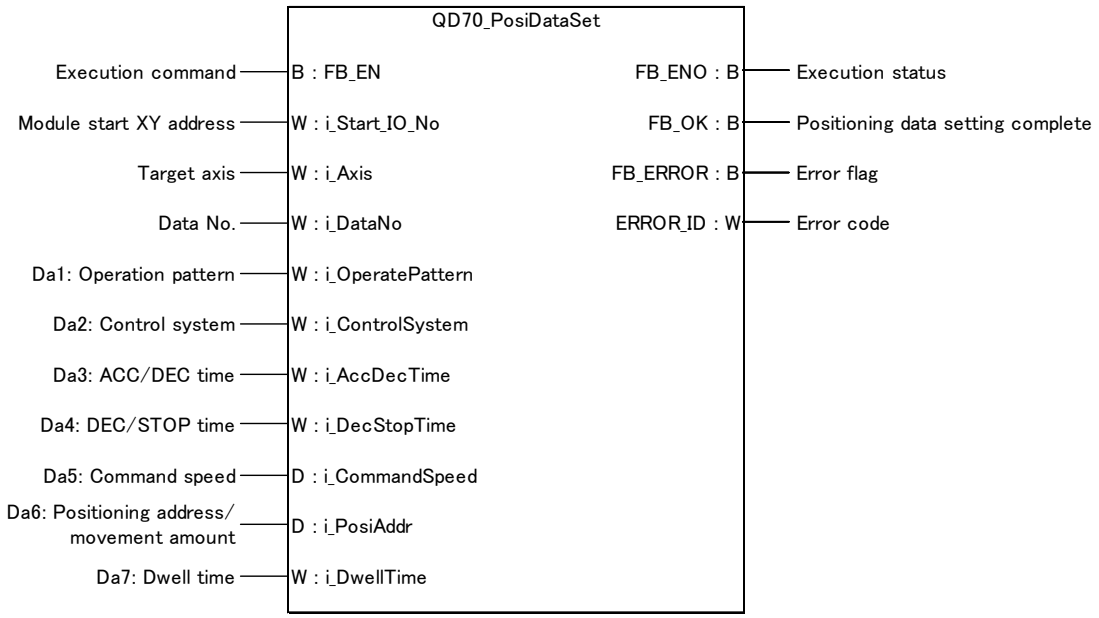
This chapter includes information related to the M+QD70_SetZData function block.
It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

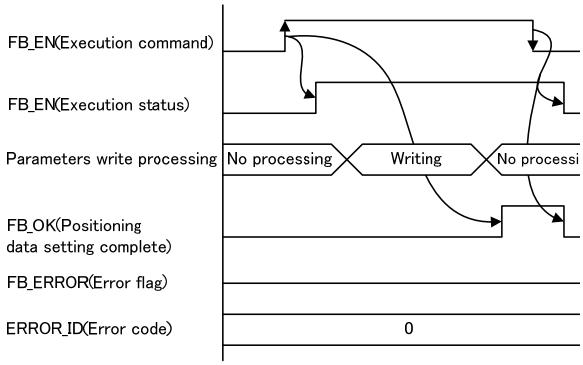
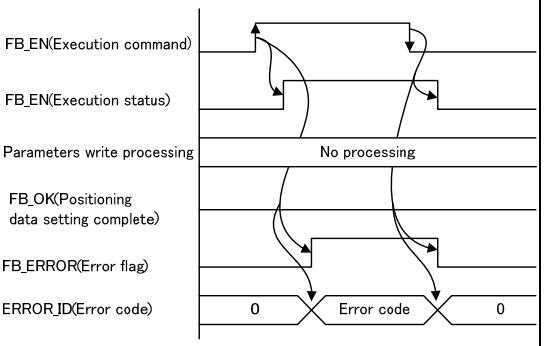
3.M+QD70_PosiDataSet (Positioning data setting)

FB Name

M+QD70_PosiDataSet

Function Overview

Item	Description
Function overview	Sets positioning data (Da.1 to Da.7).
Symbol	
Applicable hardware and software	Compatible hardware: QD70P(4/8), QD70D(4/8)
	Hardware details Q series: Basic model / High performance model / Universal model *Not applicable for QCPU (A mode)
	Compatible software: GX Works2 Ver1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 301* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).

Item	Description
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) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to Appendix 1 - Application examples.
Timing chart	[When operation completes without error]  [When an error occurs] 
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting.

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.
Data No.	i_DataNo	W	1~10	Designate the positioning data No.
Da1: Operation pattern	i_OperatePattern	W	0: Positioning termination 1: Continuous positioning control 2: Continuous path control	Designate whether positioning control of a certain data No. is to be ended with just that data, or whether the positioning control for the next data No. is to be carried out in succession.

Name	Variable name	Data type	Setting range	Description
Da2: Control system	i_ControlSystem	W	o: No control method 1: 1-axis linear control (ABS) 2: 1-axis linear control (INC) 3: Speed-position control (Forward) 4: Speed-position control (Reverse)	Set the "control system" for carrying out positioning control.
Da3: ACC/DEC time	i_AccDecTime	W	0~32767 (ms)	Set the acceleration/deceleration time for positioning control.
Da4: DEC/STOP time	i_DecStopTime	W	0~32767 (ms)	Set the time taken to make a stop after axis stop factor occurrence (axis stop signal ON or error occurrence).
Da5: Command speed	i_CommandSpeed	D	1) QD70P: 0~200,000 (pulse/s) 2) QD70D: 0~4,000,000 (pulse/s)	Set the command speed for positioning control.
Da6: Positioning address/movement amount	i_PosiAddr	D	Da2: Control system =1,2 -2,147,483,648~ 2,147,483,647 (pulse) Da2: Control system =3,4 0~2,147,483,647 (pulse)	Set the target value or movement amount for position control, or the movement amount or new current value for position control of speed-position switching control. The setting value differs in the setting range depending on "control system".

Name	Variable name	Data type	Setting range	Description
Da7: Dwell time	i_DwellTime	W	0~65,535 (ms) *1	*1: Setting method •0~32,767: Set in decimal. •32,768~65,535: Set after converted into hexadecimal.

■Output labels

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

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

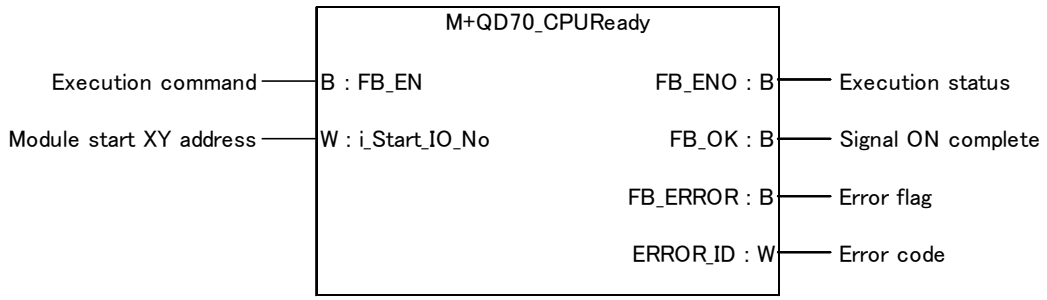
This chapter includes information related to the M+QD70_PosiDataSet function block.
It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

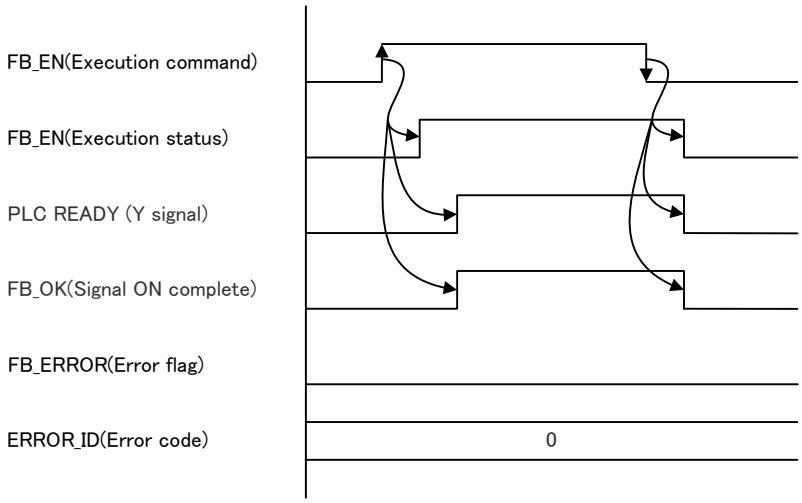
4.M+QD70_CPUReady (PLC ready signal ON)

FB Name

M+QD70_CPUReady

Function Overview

Item	Description
Function overview	Outputs PLC ready signal.
Symbol	
Applicable hardware and software	Compatible hardware: QD70P(4/8), QD70D(4/8)
	Hardware details Q series: Basic model / High performance model / Universal model *Not applicable for QCPU (A mode)
	Compatible software: GX Works2 Ver1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 258* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).
Function description	1) By turning ON FB_EN (Execution command), the PLC ready signal (Y signal) is turned ON. 2) After FB_EN (Execution command) is turned ON, the FB is completed by one scan.
Compiling method	Macro type

Item	Description
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. Please do not use this index register in an interrupt program. 5) Every input must be provided with a value for proper FB operation. 6) When FB_EN (Execution command) is turned ON from OFF, the OFF time should be set to 100 ms or longer. 7) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Real-time execution
Application example	Refer to Appendix 1 - Application examples.
Timing chart	
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
None	None

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)

■Output labels

Name	Variable name	Data type	Initial value	Description
Execution status	FB_ENO	B	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Signal ON complete	FB_OK	B	OFF	When ON, it indicates that the PLC ready signal ON is completed.
Error flag	FB_ERROR	B	OFF	Always OFF
Error code	ERROR_ID	W	0	Always 0

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

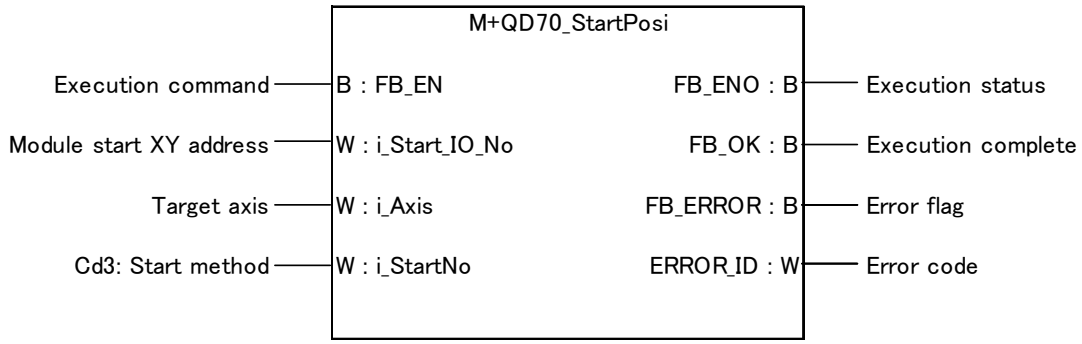
This chapter includes information related to the M+QD70_CPUReady function block.
It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

5.M+QD70_StartPosi (Positioning start)

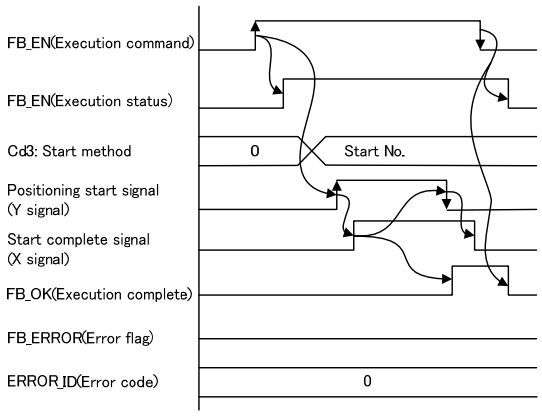
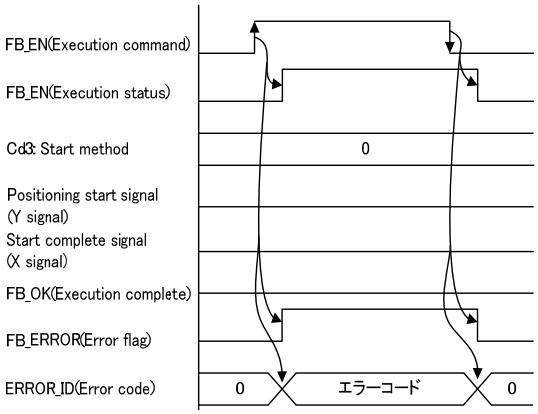
FB Name

M+QD70_StartPosi

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Starts positioning.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="2">Applicable hardware and software</td><td>Compatible hardware: QD70P(4/8), QD70D(4/8)
Hardware details
<table>
<tr><td rowspan="3">Q series</td><td>Basic model</td></tr>
<tr><td>High performance model</td></tr>
<tr><td>Universal model</td></tr>
</table>
*Not applicable for QCPU (A mode)</td></tr>
<tr><td>Compatible software: GX Works2 Ver1.31H or later</td></tr>
<tr><td>Programming language</td><td>Ladder</td></tr>
<tr><td>Number of steps (maximum value)</td><td>For universal model CPU: 332*
*The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).</td></tr>
</table>

Item	Description
Function description	1) By turning ON FB_EN (Execution command), the control required for i_StartNo (Cd3: Start method) is started. 2) The FB is started when the positioning start signal (Y signal) 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 (Y signal). When these conditions are not satisfied, the positioning start signal (Y signal) is not turned ON, but FB_OK (Execution complete) is turned ON. (In this case, warnings at start will not occur.) [Conditions] Module ready signal (X signal): ON, Positioning start signal (Y signal): OFF, Start complete signal (X signal): OFF, BUSY signal (X signal): OFF 4) After FB_EN (Execution command) is turned ON, the FB is completed in multiple scans. 5) When the start complete signal (X signal) is ON or FB_EN (Execution command) is OFF, the positioning start signal (Y signal) 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
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, Z7 and Z6. Please do not use these index registers in an interrupt program. 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. 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. 8) Every input must be provided with a value for proper FB operation. 9) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Pulsed execution (multiple scan execution type)

Item	Description
Application example	Refer to Appendix 1 - Application examples.
Timing chart	[When operation completes without error] [When an error occurs]  
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting.

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.

Name	Variable name	Data type	Setting range	Description
Cd3: Start method	i_StartNo	W	QD70P: 0: Positioning control (Starts from No.1) 9000: Machine OPR control 9001: Fast OPR control QD70D: 0~10: Data No. for positioning (Starts from No.1 when 0 is set) 9000: Machine OPR control 9001: Fast OPR control	Set the "positioning start number" for "Cd. 3 Start method" according to the control to be started.

■Output labels

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

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

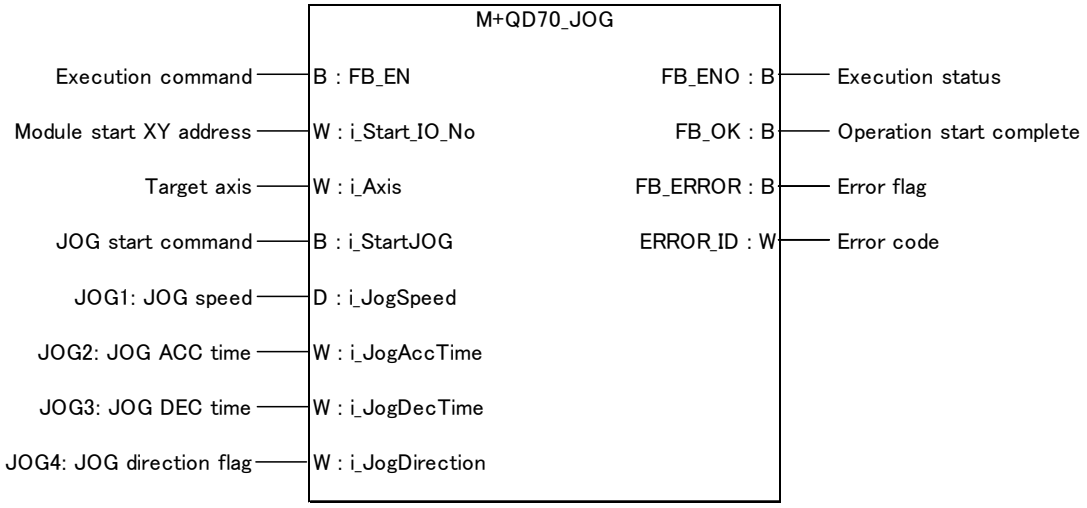
This chapter includes information related to the M+QD70_StartPosi function block.
It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

6.M+QD70_JOG (JOG operation)

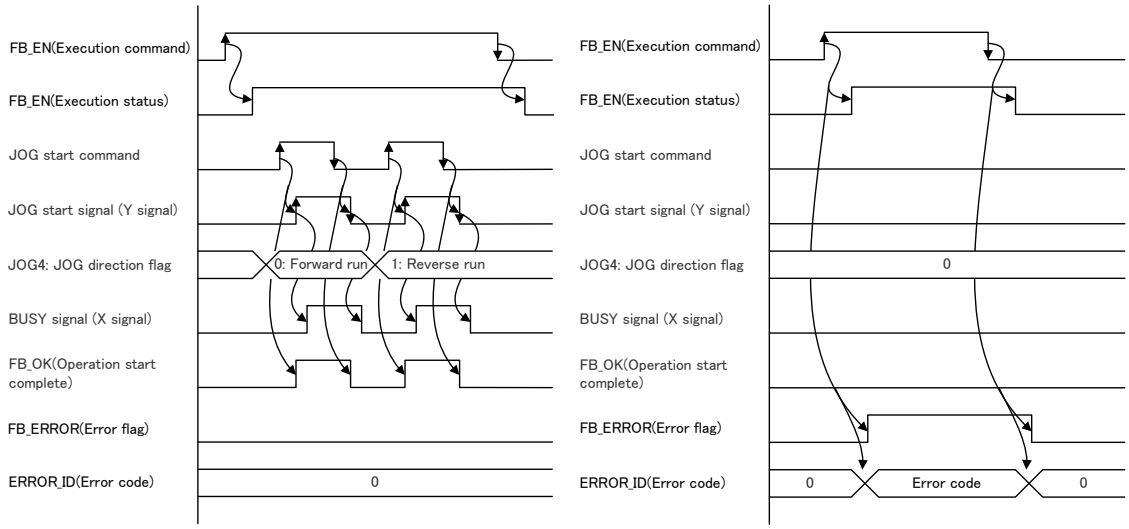
FB Name

M+QD70_JOG

Function Overview

Item	Description
Function overview	Carries out JOG operation.
Symbol	
Applicable hardware and software	Compatible hardware: QD70P(4/8), QD70D(4/8) Hardware details Q series: Basic model / High performance model / Universal model *Not applicable for QCPU (A mode) Compatible software: GX Works2 Ver1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 342* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).

Item	Description
Function description	1) After FB_EN (Execution command) is turned ON, JOG operation is carried out according to the setting of JOG1 to JOG4 by turning ON i_StartJOG (JOG start command). 2) After FB_EN (Execution command) is turned ON, the FB is always executed. 3) After FB_EN (Execution command) is turned ON and operation is performed with i_StartJOG (JOG start command), if FB_EN (Execution command) is turned OFF, the operation stops. 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, Z8, Z7, and Z6. 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) 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. 8) Every input must be provided with a value for proper FB operation. 9) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Real-time execution
Application example	Refer to Appendix 1 - Application examples.

Item	Description
Timing chart	[When operation completes without error] [When an error occurs] 
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting. (After the JOG start command is turned OFF and FB_EN is turned ON from OFF, turn ON the JOG start command again.)

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.

Name	Variable name	Data type	Setting range	Description
JOG start command	i_StartJOG	B	ON, OFF	Turn ON to perform the JOG operation.
JOG1: JOG speed	i_JogSpeed	D	QD70P: 1~200,000 (pulse/s) QD70D: 1~4,000,000 (pulse/s)	Set the speed for JOG operation.
JOG2: JOG ACC time	i_JogAccTime	W	0~32,767 (ms)	Set the time taken to reach "JOG speed" from "Bias speed at start" at a JOG operation start.
JOG3: JOG DEC time	i_JogDecTime	W	0~32,767 (ms)	Set the time taken to make a stop after reaching "Bias speed at start" from "JOG speed" at a JOG operation stop.
JOG4:JOG direction flag	i_JogDirection	W	0: Forward run JOG 1: Reverse run JOG	Set the forward/reverse direction for JOG operation.

■Output labels

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

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

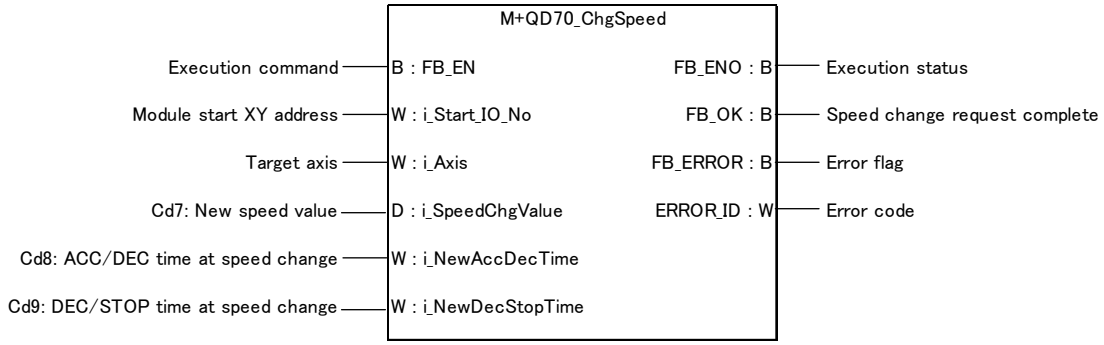
This chapter includes information related to the M+QD70_JOG function block.
It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

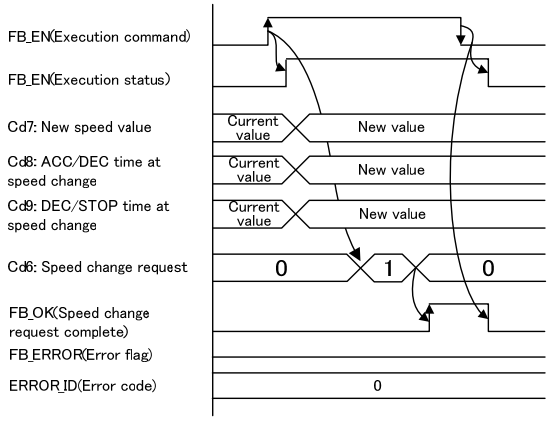
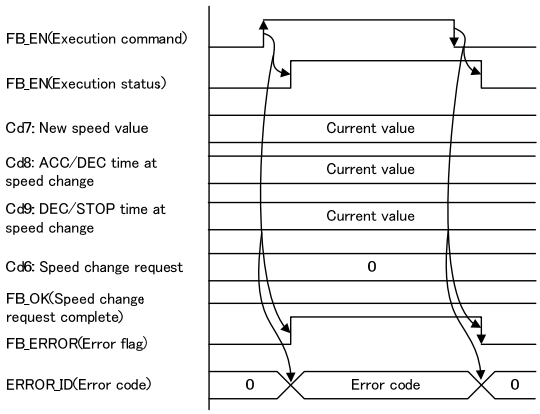
7.M+QD70_ChgSpeed (Speed change)

FB Name

M+QD70_ChgSpeed

Function Overview

Item	Description
Function overview	Executes speed change.
Symbol	
Applicable hardware and software	Compatible hardware: QD70P(4/8), QD70D(4/8)
	Hardware details Q series: Basic model / High performance model / Universal model *Not applicable for QCPU (A mode)
	Compatible software: GX Works2 Ver1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 292* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).
Function description	1) By turning ON FB_EN (Execution command), the speed during control, acceleration/deceleration time at speed change, and deceleration/stop time at speed change are changed. 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

Item	Description
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 (X signal) is OFF, the request will be ignored. In this case, FB_OK (Speed change request complete) is not turned ON. 8) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to Appendix 1 - Application examples.
Timing chart	[When operation completes without error]  [When an error occurs] 
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting.

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.
Cd7: New speed value	i_SpeedChgValue	D	1) QD70P: 0~200,000 (pulse/s) 2) QD70D: 0~4,000,000 (pulse/s)	Set the new speed.
Cd8: ACC/DEC time at speed change	i_NewAccDecTime	W	0~32,767 (ms)	Set the acceleration/ deceleration time after a speed change.
Cd9: DEC/STOP time at speed change	i_NewDecStopTime	W	0~32,767 (ms)	Set the deceleration stop time after a speed change.

■Output labels

Name	Variable name	Data type	Initial value	Description
Execution status	FB_ENO	B	OFF	ON: Execution command is ON. OFF: Execution command is OFF.

Name	Variable name	Data type	Initial value	Description
Speed change request complete	FB_OK	B	OFF	When ON, it indicates that the speed change request is completed.
Error flag	FB_ERROR	B	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	W	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

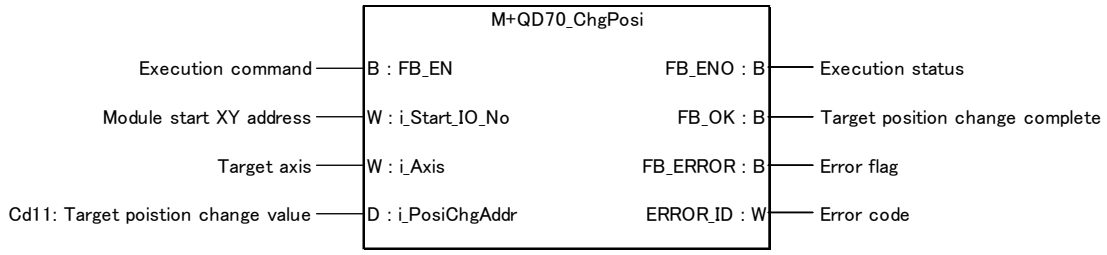
This chapter includes information related to the M+QD70_ChgSpeed function block.
It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

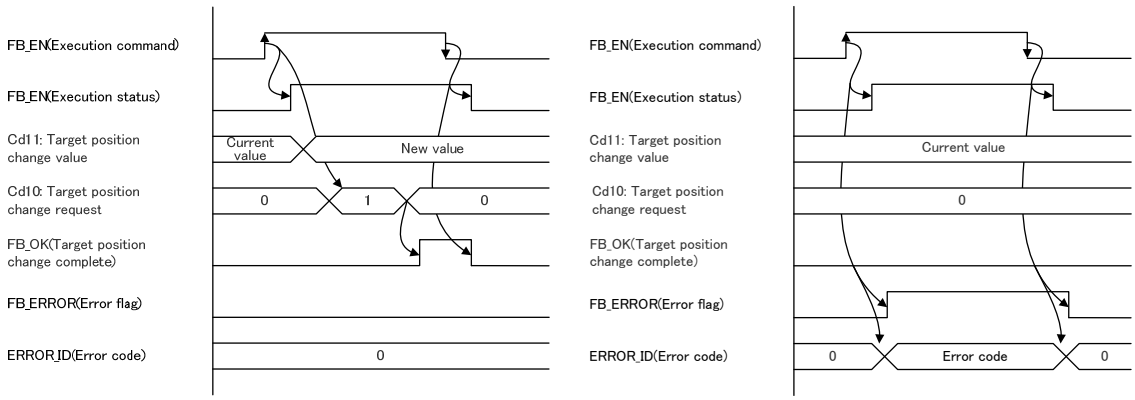
8.M+QD70_ChgPosi (Target position change)

FB Name

M+QD70_ChgPosi

Function Overview

Item	Description
Function overview	Changes the target position.
Symbol	
Applicable hardware and software	Compatible hardware: QD70D(4/8) Hardware details Q series: Basic model / High performance model / Universal model *Not applicable for QCPU (A mode)
	Compatible software: GX Works2 Ver1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 323* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).
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 (Cd11: Target position change value). 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

Item	Description
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 (X signal) is OFF, the request will be ignored. In this case, FB_OK (Target position change complete) is not turned ON. 8) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to Appendix 1 - Application examples.
Timing chart	[When operation completes without error] [When an error occurs] 
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting.

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.
Cd11: Target position change value	i_PosiChgAddr	D	-2,147,483,648~ 2,147,483,647 (pulse)	Set a value to change the positioning address or movement amount during position control when "Positioning termination" is set for "Operation pattern".

■Output labels

Name	Variable name	Data type	Initial value	Description
Execution status	FB_ENO	B	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Target position change complete	FB_OK	B	OFF	When ON, it indicates that a request of target position change request flag has been accepted by the module.
Error flag	FB_ERROR	B	OFF	When ON, it indicates that an error has occurred.

Name	Variable name	Data type	Initial value	Description
Error code	ERROR_ID	W	0	FB error code output.

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

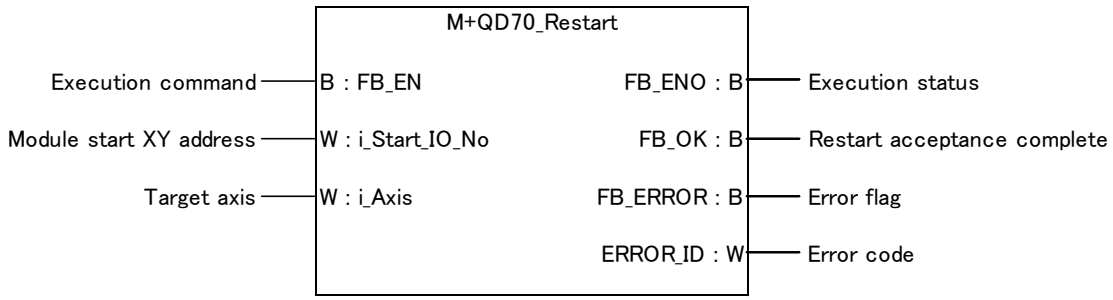
This chapter includes information related to the M+QD70_ChgPosi function block.
It does not include information on restrictions of use such as combination with positioning modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

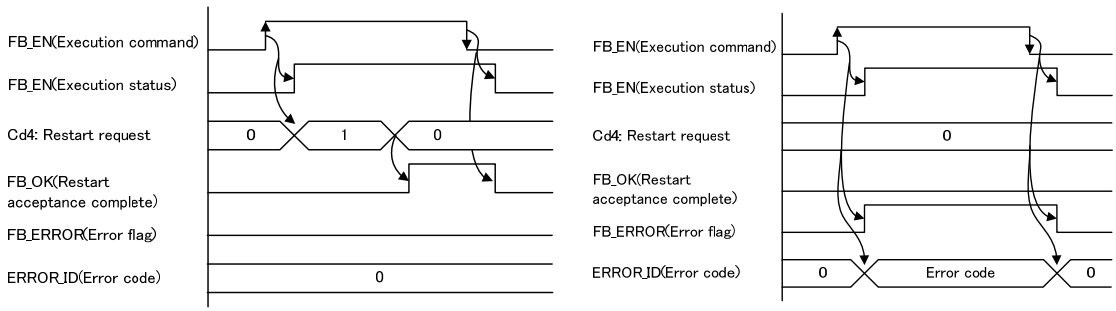
9.M+QD70_Restart (Restart)

FB Name

M+QD70_Restart

Function Overview

Item	Description
Function overview	Performs restart.
Symbol	
Applicable hardware and software	Compatible hardware: QD70P(4/8), QD70D(4/8) Hardware details Q series: Basic model / High performance model / Universal model *Not applicable for QCPU (A mode)
	Compatible software: GX Works2 Ver1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 298* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).
Function description	1) By turning ON FB_EN (Execution command), positioning operation that stopped when a stop factor has occurred restarts. 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

Item	Description
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 axis operation status is set to other than "Stopped", the request will be ignored. In this case, FB_OK (Restart acceptance complete) is not turned ON. 8) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to Appendix 1 - Application examples.
Timing chart	[When operation completes without error] [When an error occurs] 
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting.

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.

■Output labels

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

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

This chapter includes information related to the M+QD70_Restart function block.

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

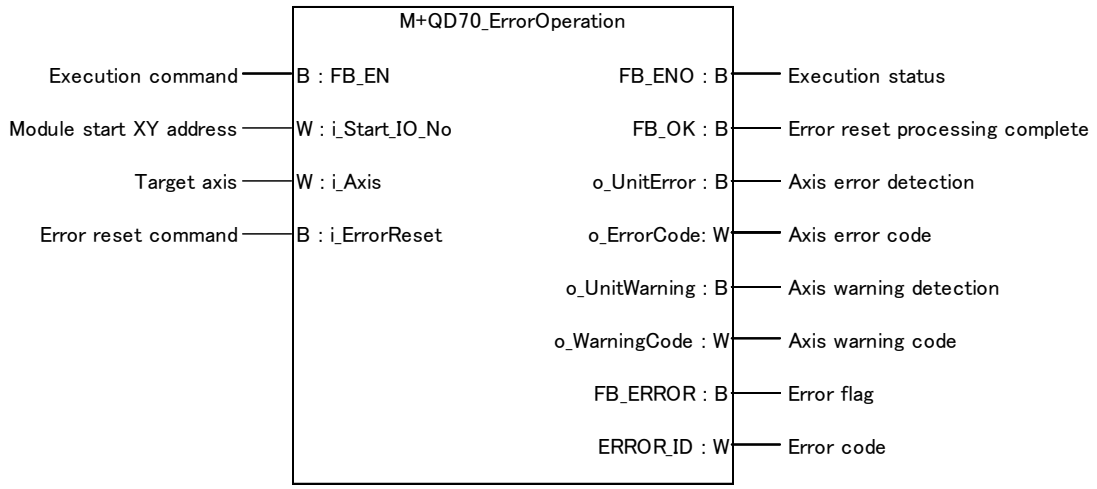
Before using any Mitsubishi products, please read all the relevant manuals.

10.M+QD70_ErrorOperation (Error operation)

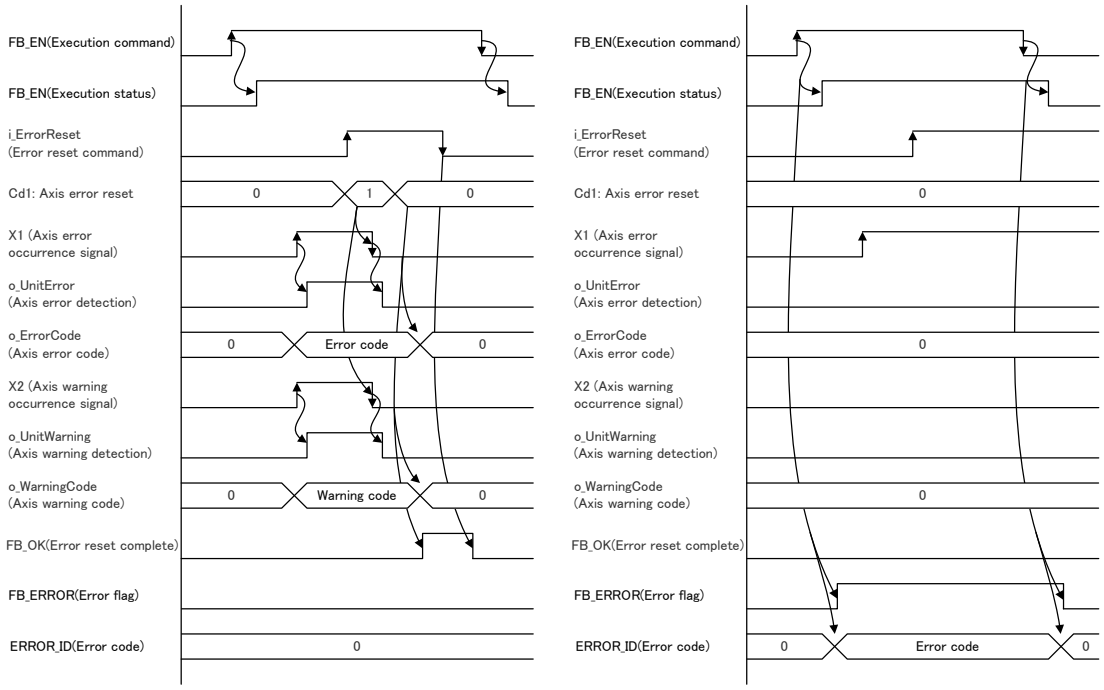
FB Name

M+QD70_ErrorOperation

Function Overview

Item	Description
Function overview	Monitors errors and warnings, and performs error reset.
Symbol	
Applicable hardware and software	Compatible hardware: QD70P(4/8), QD70D(4/8) Hardware details Q series: Basic model / High performance model / Universal model *Not applicable for QCPU (A mode)
	Compatible software: GX Works2 Ver1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 326* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).

Item	Description
Function description	1) When FB_EN (Execution command) is turned ON, an error in the target axis is monitored. 2) An error code is stored in o_ErrorCode (Axis error code) when a module error occurs. 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. 4) A warning can be reset by turning ON i_ErrorReset (Error reset command) even when a module warning is occurring. 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	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) Do not change i_Axis (Target axis) while FB_EN (Execution command) is turned ON. 7) Every input must be provided with a value for proper FB operation. 8) Parameters such as the pulse output mode and external I/O signal logic must be properly configured to match devices and systems connected to the QD70.
FB operation type	Real-time execution
Application example	Refer to Appendix 1 - Application examples.

Item	Description
Timing chart	[When operation completes without error] [When an error occurs] 
Relevant manuals	•MELSEC-Q Type QD70 Positioning Module User's Manual •MELSEC-Q Type QD70D Positioning Module User's Manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target axis is not valid. The target axis is not within the range of 1 to 8. Please try again after confirming the setting.

Labels

■Input labels

Name	Variable name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address (For QD70D, the start address of the intelligent function module)	i_Start_IO_No	W	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 QD70 module is mounted. (For example, enter H10 for X10.)
Target axis	i_Axis	W	1~8	Specify the axis number.
Error reset command	i_ErrorReset	B	ON, OFF	ON: An error is reset. OFF: An error is not reset.

■Output labels

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

FB Version Upgrade History

Version	Date	Description
1.00A	2011/02/18	First edition

Note

This chapter includes information related to the M+QD70_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.

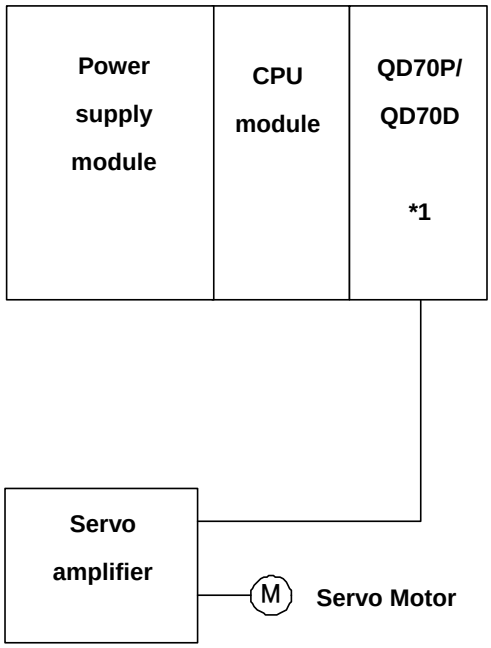
Appendix 1 - Application examples

The following shows the QD70 FB application examples.

System configuration

I/O signals are allocated as shown in the figure below.

(1) System configuration for Q series



*1: I/O allocation

- For QD70P, (X00~X1F)(Y00~Y1F)
- For QD70D, (X00~X2F)(Y00~Y2F) or (X00~X1F)(Y00~Y1F) depending on the setting.

Reminder

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

Device list

Input (commands)

Device	FB function name	Application (ON details)
M0	Parameter setting	Parameter setting request
M10	OPR data setting	OPR data setting request
M20	Positioning data setting	Positioning data setting request
M30	PLC ready signal ON	PLC ready signal ON condition judgment
M31		PLC ready signal ON request
M40	Positioning start	Positioning start request
M50	JOG operation	JOG operation start request
M51		JOG start
M60	Speed change	Speed change request
M70	Target position change	Target position change command
M80	Restart	Restart command
M90	Error operation	Error operation FB start
M91		Error reset request

Data register

Device	FB function name	Application (ON details)
D0	Parameter setting	Parameter setting FB error code
D10	OPR data setting	OPR data setting FB error code
D20	Positioning data setting	Positioning data setting FB error code
D40	Positioning start	Positioning start FB error code
D50	JOG operation	JOG operation FB error code
D60	Speed change	Speed change FB error code
D70	Target position change	Target position change FB error code
D80	Restart	Restart FB error code
D90	Error operation	Error code occurred in designated axis
D91		Warning code occurred in designated axis
D92		Error operation FB error code

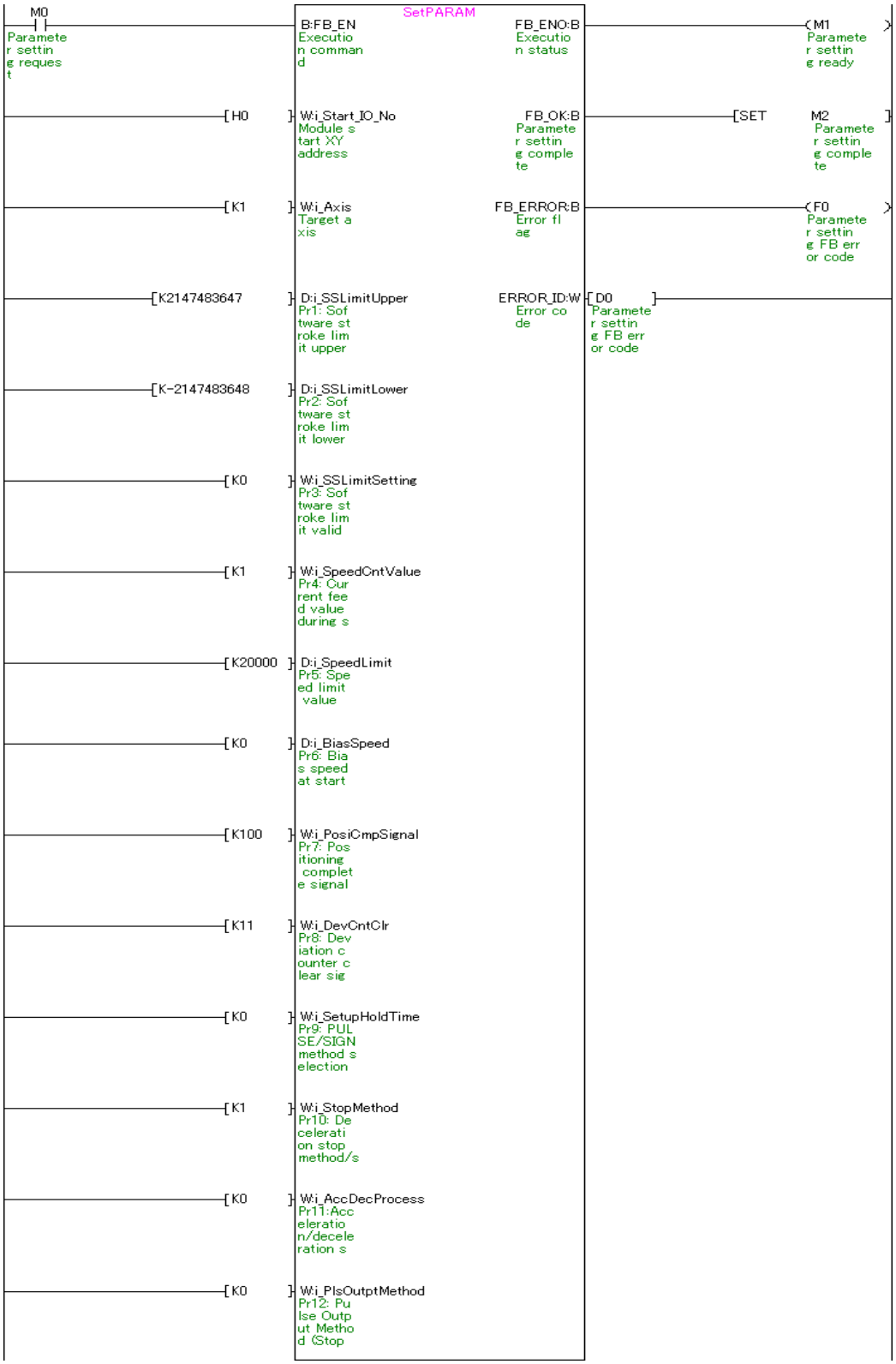
Output (Checks)

Device	FB function name	ready
M1	Parameter setting	Parameter setting ready
M2		Parameter setting complete
F0		Parameter setting FB error
M11	OPR data setting	OPR data setting ready
M12		OPR data setting complete
F10		OPR data setting FB error
M21	Positioning data setting	Positioning data setting ready
M22		Positioning data setting complete
F20		Positioning data setting FB error
M32	PLC ready signal ON	PLC ready signal ON ready
M33		PLC ready signal ON complete
M41	Positioning start	Positioning start ready
M42		Execution complete
F40		Positioning start FB error
M52	JOG operation	JOG operation ready
M53		Operation start complete
F50		JOG operation FB error
M61	Speed change	Speed change ready
M62		Speed change request complete
F60		Speed change FB error
M71	Target position change	Target position change ready
M72		Target position change acceptance complete
F70		Target position change FB error
M81	Restart	Restart ready
M82		Restart acceptance complete
F80		Restart FB error
M92	Error operation	Error reset ready
M93		Error reset complete
M94		Axis error detection
M95		Axis warning detection
F90		Error operation FB error

M+QD70_SetPARAM (Parameter setting)

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

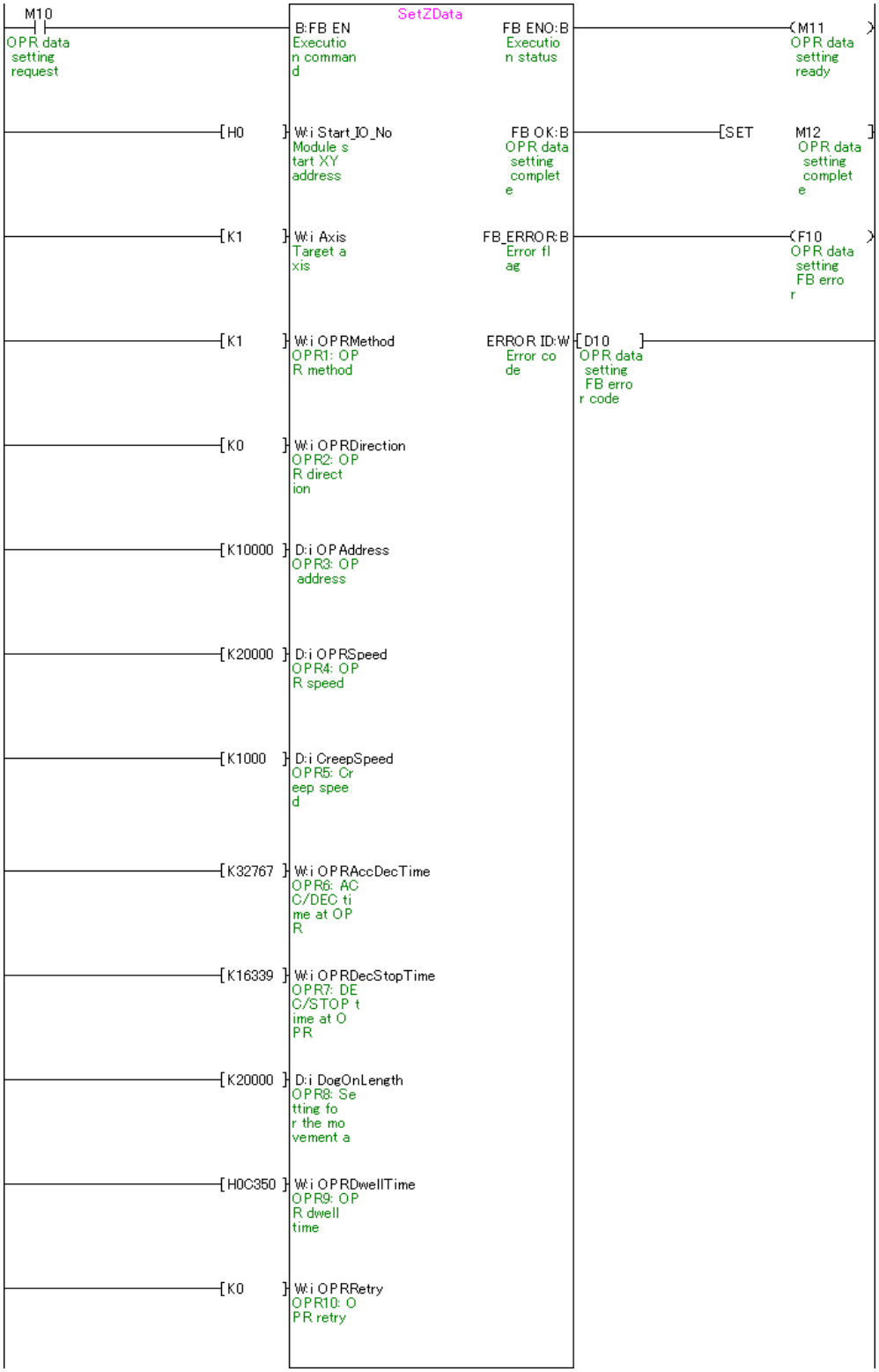
*The parameter setting complete (M2) contact is used for PLC ready signal ON FB (M+QD70_CPUReady).



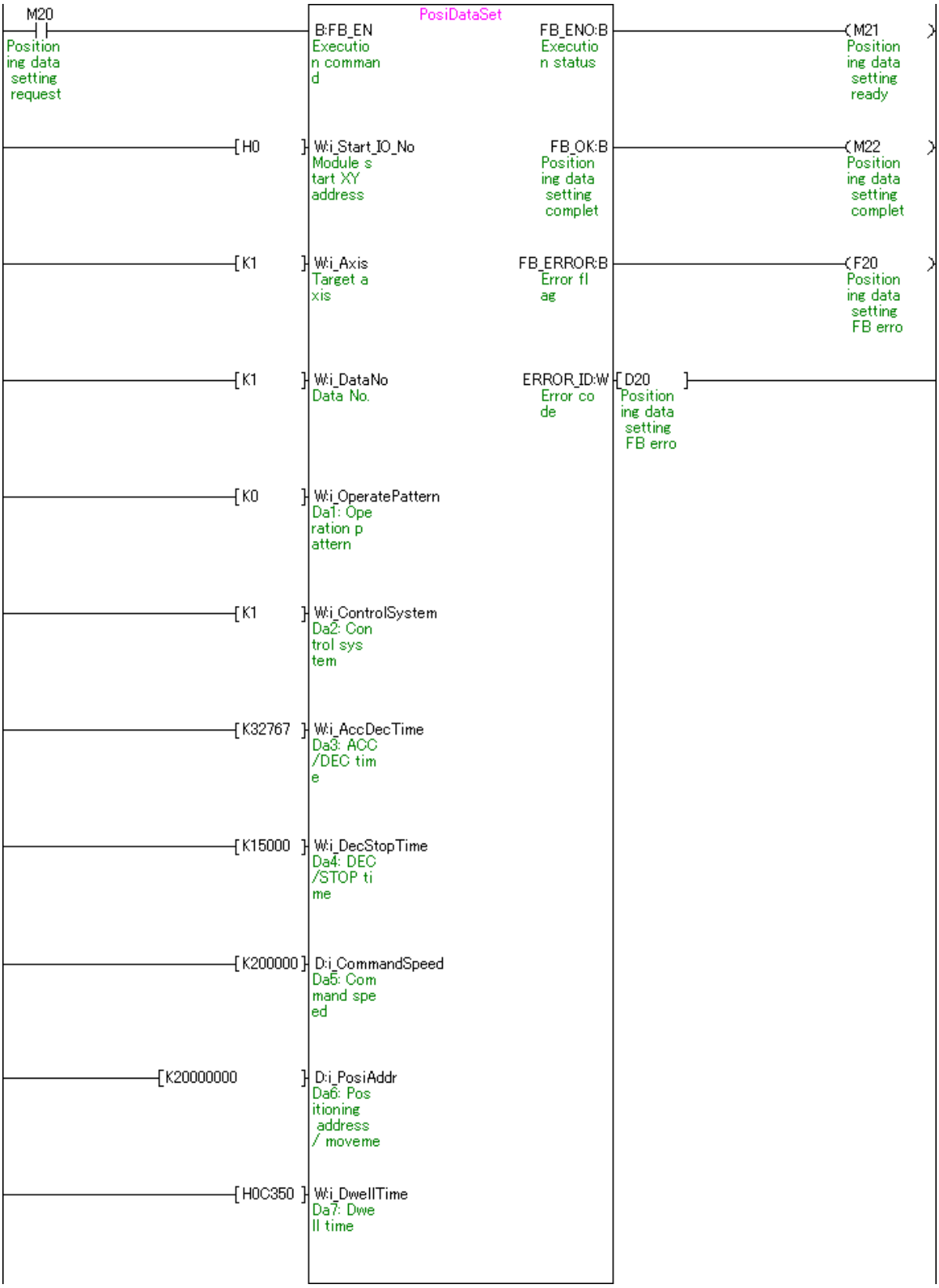
M+QD70_SetZData (OPR data setting)

*It is recommended to use GX Configurator-PT 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 parameter setting complete (M12) contact is used for PLC ready signal ON FB (M+QD70_CPUReady).

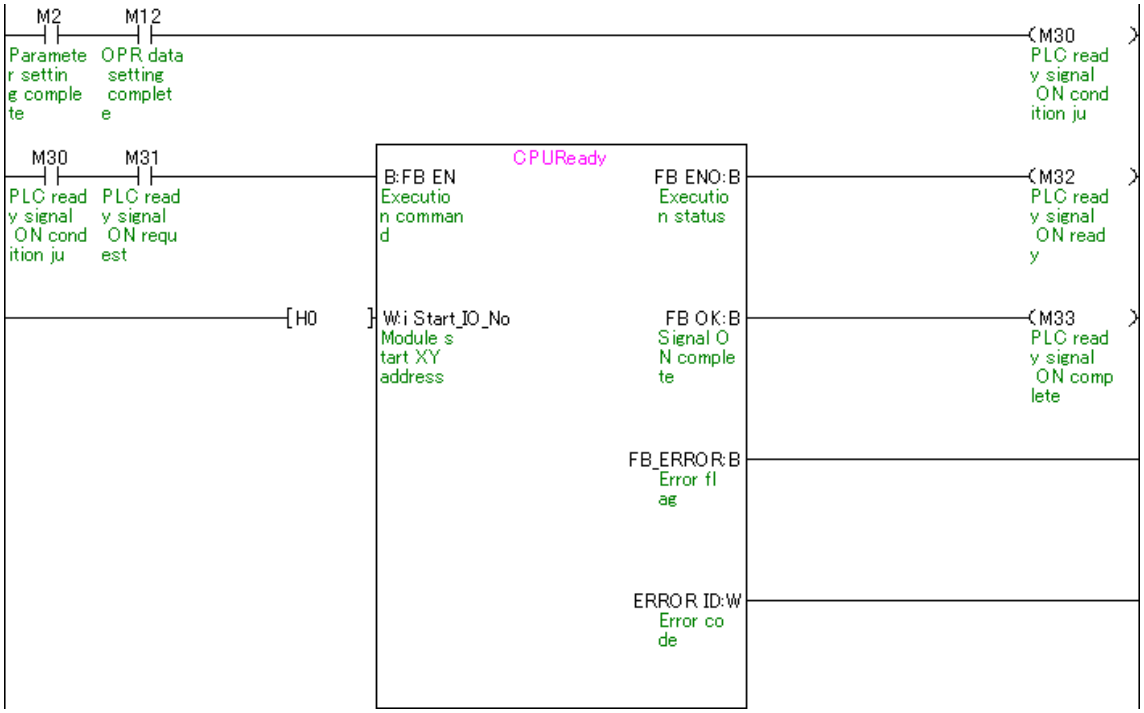


M+QD70_PosiDataSet (Positioning data setting)

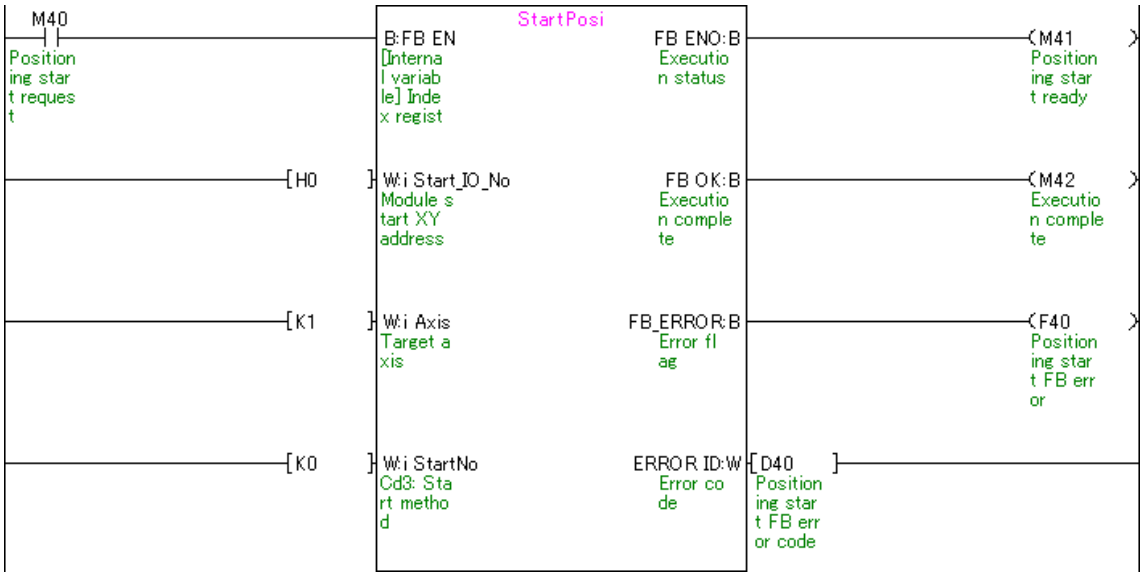


M+QD70_CPUReady (PLC ready signal ON)

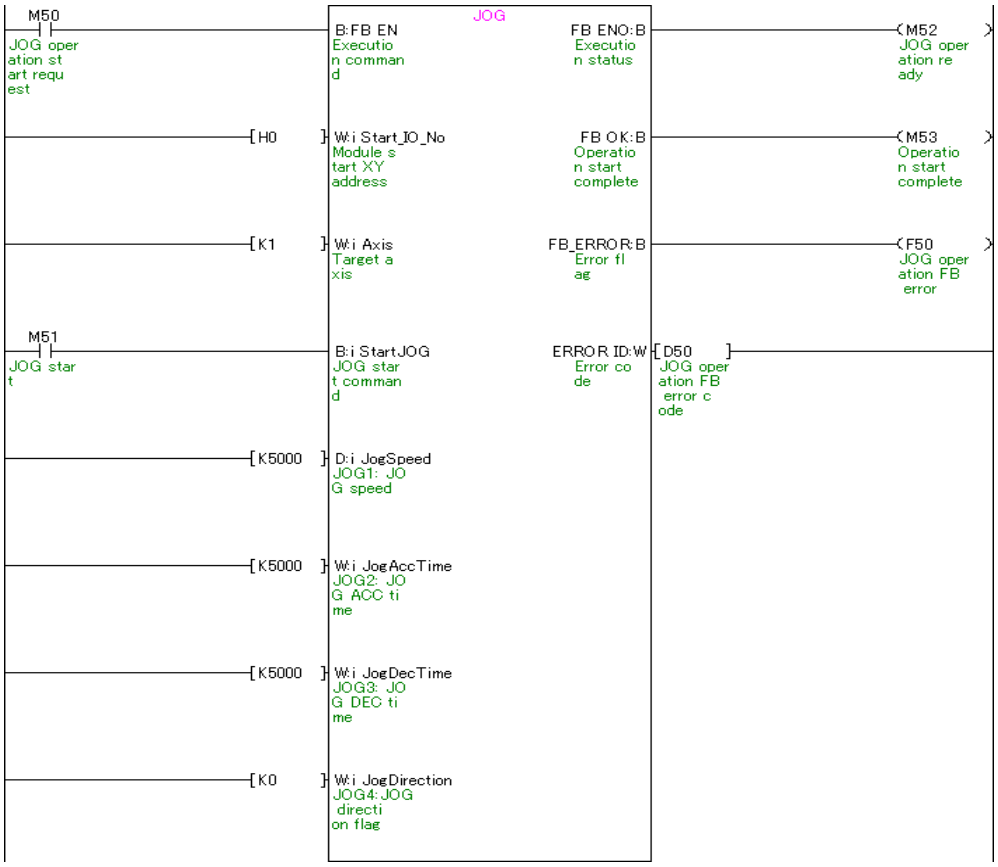
*The contacts of M2 and M12 are not required if parameters and OPR data are set not with the parameter setting FB but with GX Configurator-PT or the configuration function of GX Works 2.



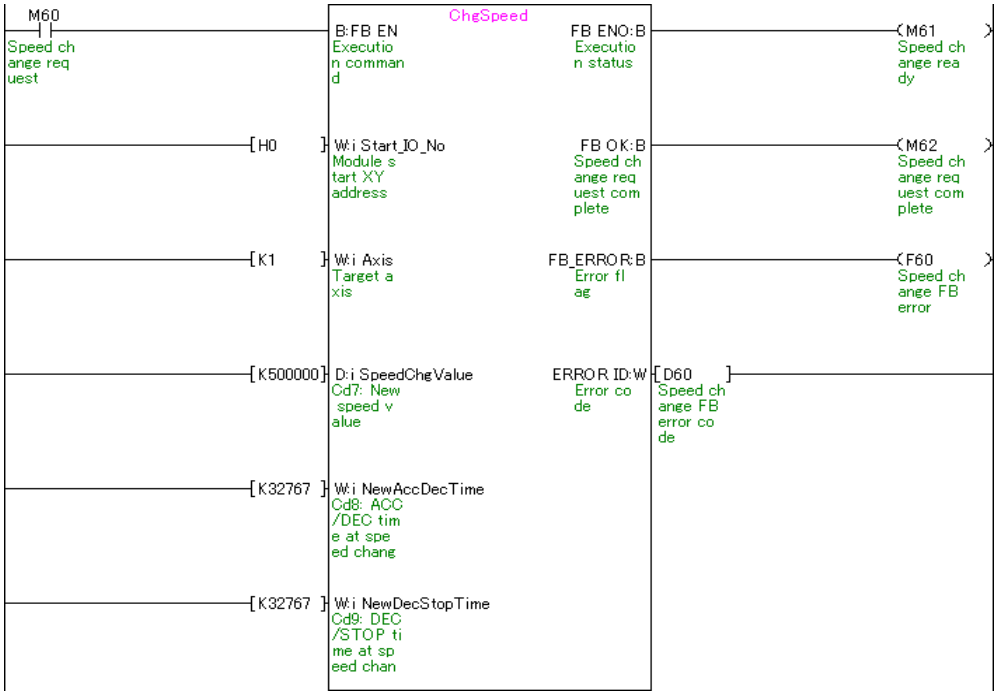
M+QD70_StartPosi (Positioning start)



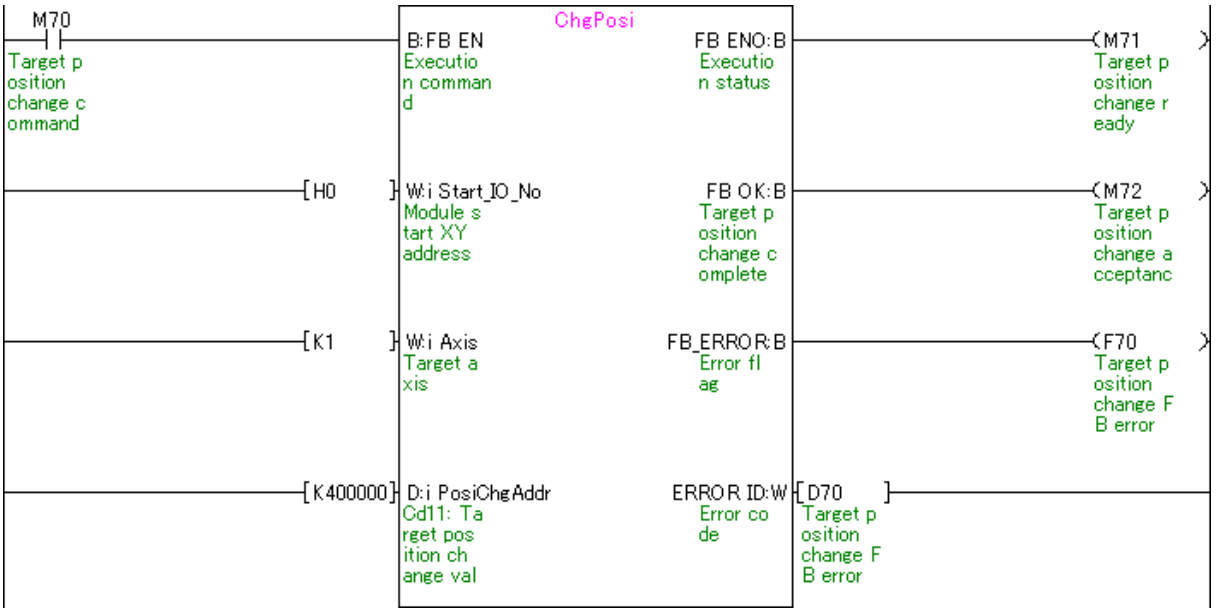
M+QD70_JOG (JOG operation)



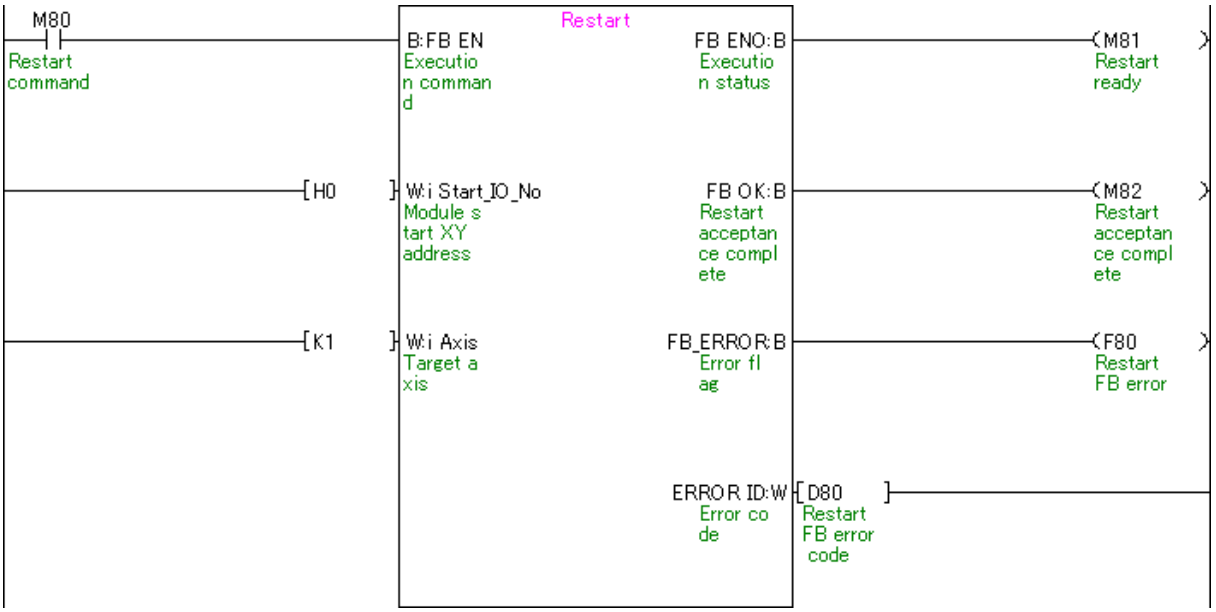
M+QD70_ChgSpeed (Speed change)



M+QD70_ChgPosi (Target position change)



M+QD70_Restart (Restart)



M+QD70_ErrorOperation (Error operation)