MELSOFT LIBRARY QD65PD2 REFERENCE MANUAL

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Reference Manual Revision History

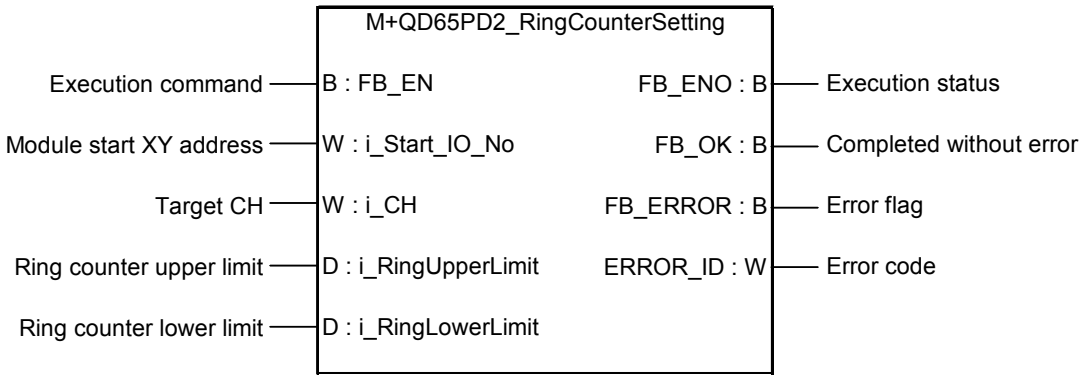
Reference Manual Number	Date	Description
FBM-M035-A	2010/10/31	First edition

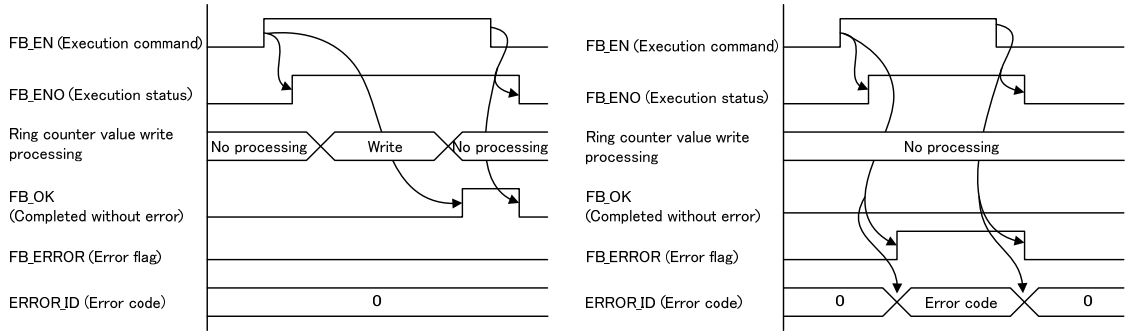
1.M+QD65PD2_RingCounterSetting (Ring counter setting)

FB Name

M+QD65PD2_RingCounterSetting

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Sets the ring counter upper limit and lower limit.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 136*
*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>
<tr><td>Function description</td><td>•When FB_EN (Execution command) is turned ON, the preset ring counter lower and upper values are stored in the buffer memory. To reflect the preset upper and lower values, turn OFF and then ON the operating condition settings batch-change command (Y signal) or count enable command (Y signal).
•FB operation is one-shot only, triggered by the FB_EN signal.
•When the target CH 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.</td></tr>
</table>

Item	Description
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 CH. 5) This FB uses index registers Z9, Z8, Z7, and Z6. 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 the configuration function of GX Works 2, using this FB is unnecessary. 8) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user' s manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH number.
Ring counter upper limit	i_RingUpperLimit	D	-2,147,483,648~ 2,147,483,647	Specify the ring counter upper limit.
Ring counter lower limit	i_RingLowerLimit	D	-2,147,483,648~ 2,147,483,647	Specify the ring counter lower limit.

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the settings of ring counter upper and lower values are 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	2010/10/31	First edition

Note

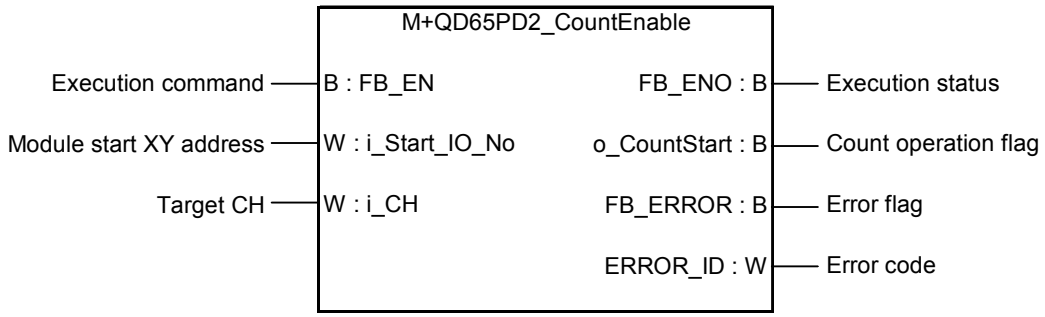
This chapter includes information related to the M+QD65PD2_RingCounterSetting function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

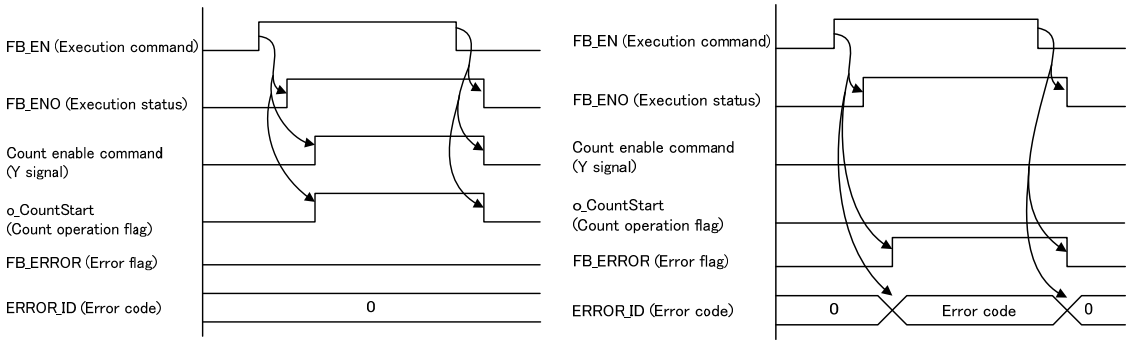
2.M+QD65PD2_CountEnable (Count enable)

FB Name

M+QD65PD2_CountEnable

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Performs count operation (count start/stop).</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 115*
*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>
<tr><td>Function description</td><td>•By turning ON/OFF FB_EN (Execution command), the count enable (Y signal) is turned ON/OFF.
•When the target CH 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.</td></tr>
<tr><td>Compiling method</td><td>Macro type</td></tr>
</table>

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 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) When this FB is used in two or more places, a duplicated coil warning will 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) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH 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.
Counter operation flag	o_CountStart	B	OFF	ON: Count enable command (Y signal) is ON. OFF: Count enable command (Y signal) 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	2010/10/31	First edition

Note

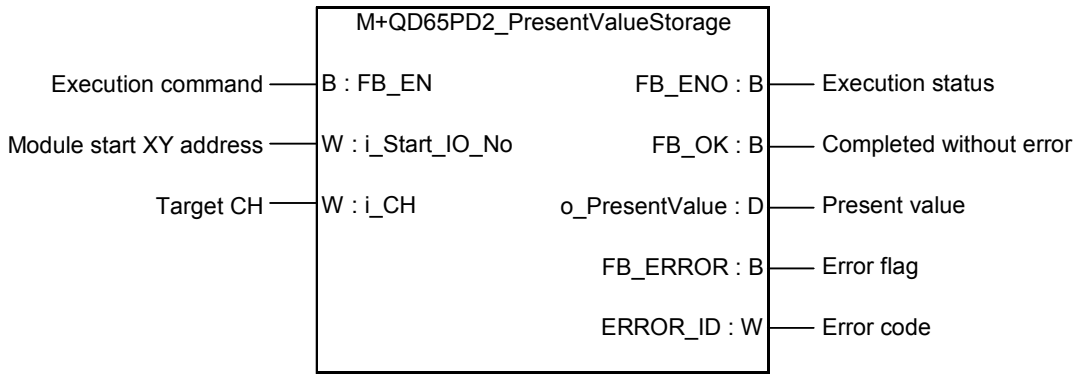
This chapter includes information related to the M+QD65PD2_CountEnable function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

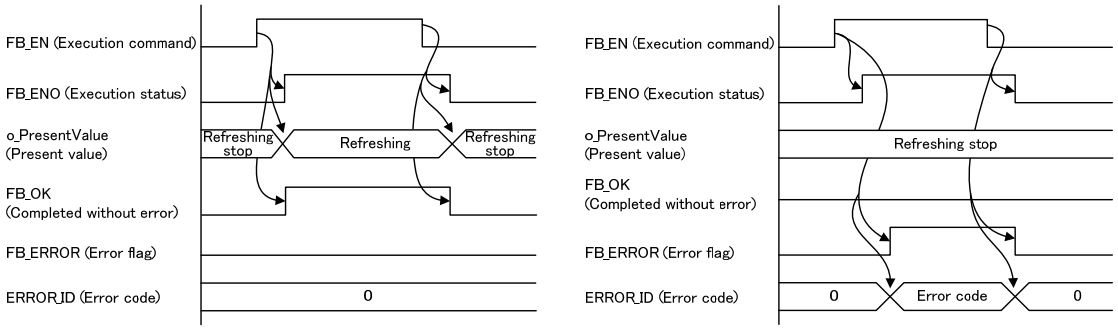
3.M+QD65PD2_PresentValueStorage (Present value monitoring)

FB Name

M+QD65PD2_PresentValueStorage

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Monitors the present value.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 103*
*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>
<tr><td>Function description</td><td>•When FB_EN (Execution command) is turned ON, the present value is read from the buffer memory.
•When the target CH 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.</td></tr>
<tr><td>Compiling method</td><td>Macro type</td></tr>
</table>

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 CH. 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) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH 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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the present value is being read.
Present value	o_PresentValue	D	0	Store the present value.
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	2010/10/31	First edition

Note

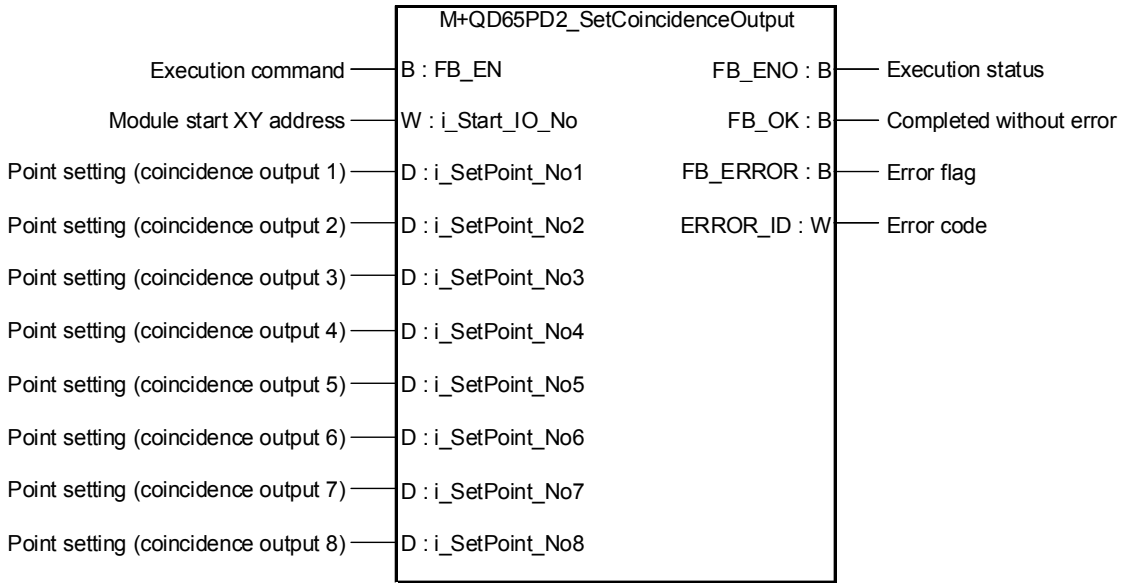
This chapter includes information related to the M+QD65PD2_PresentValueStorage function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

4.M+QD65PD2_SetCoincidenceOutput (Coincidence output function setting)

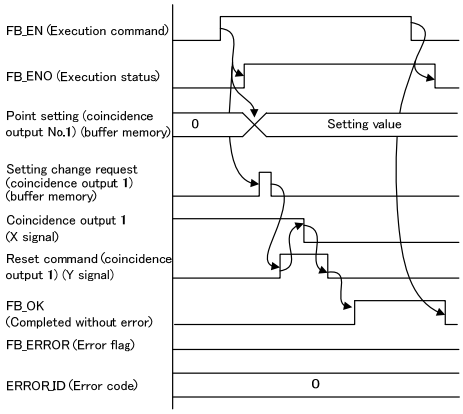
FB Name

M+QD65PD2_SetCoincidenceOutput

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Sets a coincidence output point and performs coincidence output reset.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="2">Applicable hardware and software</td><td>Compatible hardware: QD65PD2
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: 209*
*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	•By turning ON FB_EN (Execution command), i_SetPoint (Point setting (coincidence output n)) is reflected in the QD65PD2 and the reset command (coincidence output n) (Y signal) is turned ON. When the coincidence output n (X signal) is turned OFF, the reset command (coincidence output n) (Y signal) is turned OFF. (n indicates 1 to 8.) •The coincidence output and external coincidence output are turned ON again even if the coincidence output and external coincidence output are reset with this FB while the present value is the coincidence output point setting. •This FB performs for the channel that has been assigned with the channel assignment setting. •FB operation is one-shot only, triggered by the FB_EN signal.
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) Set the coincidence output condition setting (buffer memory) for 00b: coincidence output when using the FB. 7) The intelligent function module switch setting needs to be set when executing the coincidence output function with this FB. For details, refer to the user's manual. 8) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples

Item	Description
Timing chart	•Operation of I/O signals [When operation completes without error] 
Relevant manual	Q series QD65PD2 multifunction counter/timer 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Point setting (coincidence output 1)	i_SetPoint1	D	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.1 point setting value.
Point setting (coincidence output 2)	i_SetPoint2	D	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.2 point setting value.

Name	Variable name	Data type	Setting range	Description
Point setting (coincidence output 3)	i_SetPoint3	D	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.3 point setting value.
Point setting (coincidence output 4)	i_SetPoint4	D	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.4 point setting value.
Point setting (coincidence output 5)	i_SetPoint5	D	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.5 point setting value.
Point setting (coincidence output 6)	i_SetPoint6	D	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.6 point setting value.
Point setting (coincidence output 7)	i_SetPoint7	D	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.7 point setting value.
Point setting (coincidence output 8)	i_SetPoint8	D	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.8 point setting value.

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the coincidence output has been reset.
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	2010/10/31	First edition

Note

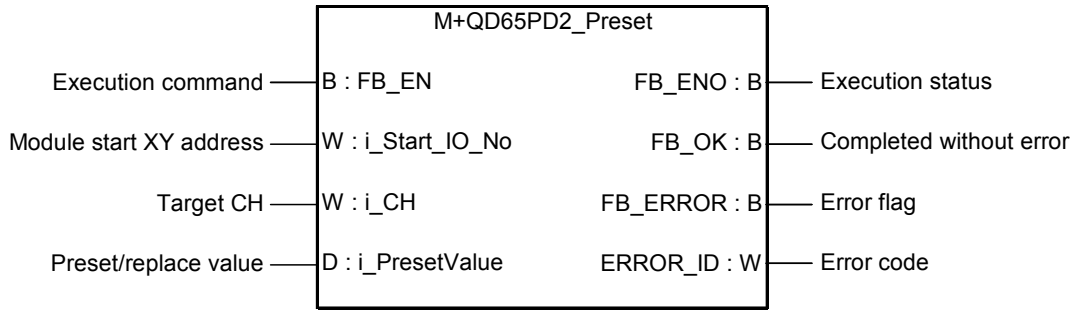
This chapter includes information related to the M+QD65PD2_SetCoincidenceOutput function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

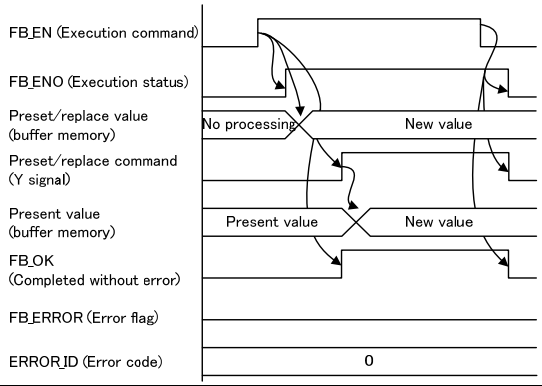
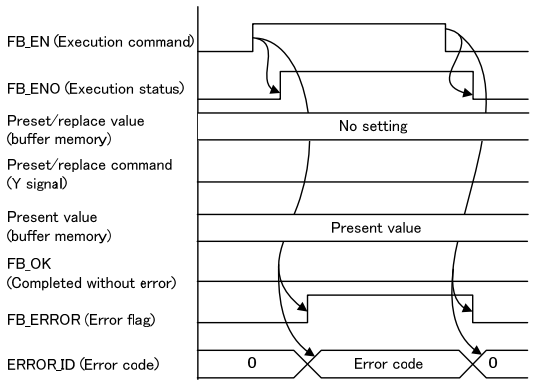
5.M+QD65PD2_Preset (Preset/replace)

FB Name

M+QD65PD2_Preset

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Performs preset/replace of the present value.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 149*
*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>
<tr><td>Function description</td><td>•By turning ON FB_EN (Execution command), i_PresetValue (Preset/replace value) is set for the preset/replace value setting (buffer memory), the preset/replace is performed, and the present/replace value of the counter is rewritten.
•FB operation is one-shot only, triggered by the FB_EN signal.
•When the target CH 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.</td></tr>
<tr><td>Compiling method</td><td>Macro type</td></tr>
</table>

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 CH. 5) This FB uses index registers Z9, Z8, Z7, and Z6. 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 preset/replace is not performed by the phase Z input terminal with this FB. 8) When this FB is used in two or more places, a duplicated coil warning will 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) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs]  
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH number.
Preset/replace value	i_PresetValue	D	-2,147,483,648~ 2,147,483,647	Specify the preset/replace value.

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that preset/replace command (Y signal) is ON.
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	2010/10/31	First edition

Note

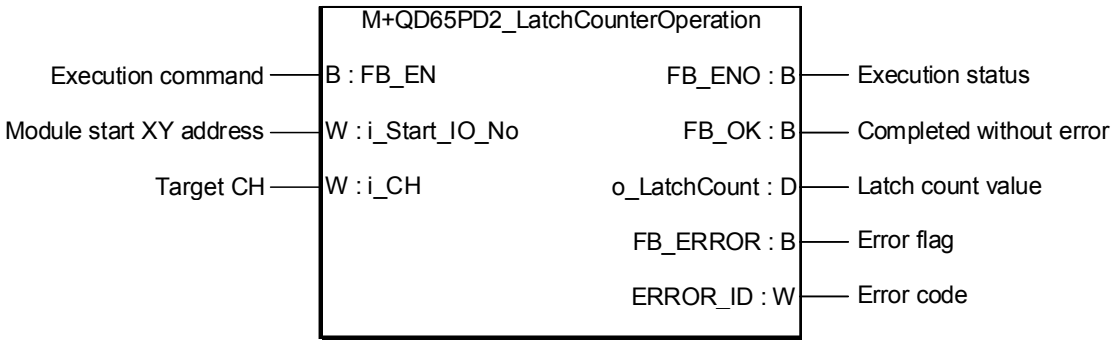
This chapter includes information related to the M+QD65PD2_Preset function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

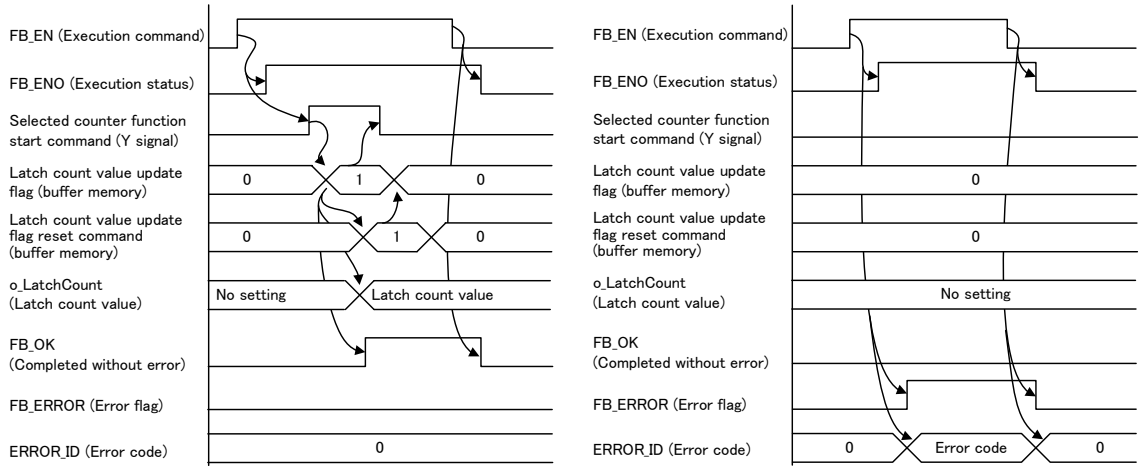
6.M+QD65PD2_LatchCounterOperation (Latch counter function operation)

FB Name

M+QD65PD2_LatchCounterOperation

Function Overview

Item	Description
Function overview	Executes latch counter function.
Symbol	
Applicable hardware and software	Compatible hardware: QD65PD2
	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: 190* *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	•By turning ON FB_EN (Execution command), the count value, which has been latched by the latch counter function, is stored in o_LatchCount (Latch count value). •FB operation is one-shot only, triggered by the FB_EN signal. •When the target CH 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) Turn OFF the selected counter function start command (Y signal) when using the FB. When the signal is ON, the latch counter function of the target channel will not be executed. 5) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target CH. 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 intelligent function module switch setting needs to be set when executing the latch counter function. For details, refer to the user's manual. 9) When this FB is used in two or more places, a duplicated coil warning will 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. 10) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 

Item	Description
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH 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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the latch counter function is completed.
Latch count value	o_LatchCount	D	0	Store the count value that has been latched.
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	2010/10/31	First edition

Note

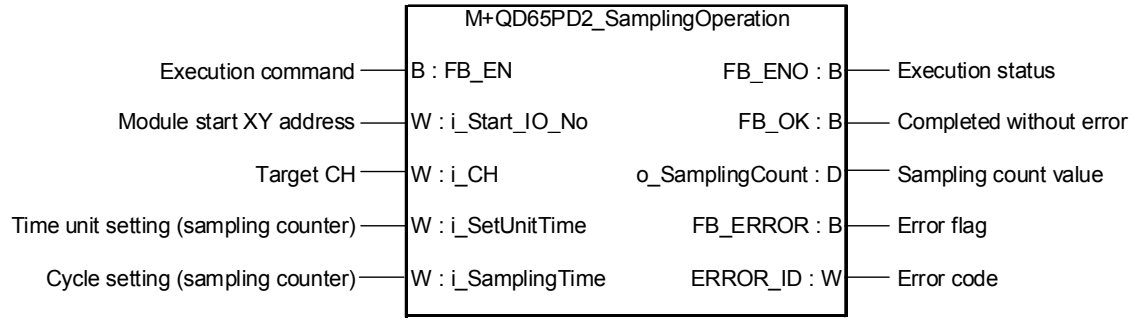
This chapter includes information related to the M+QD65PD2_LatchCounterOperation function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

7.M+QD65PD2_SamplingOperation (Sampling counter function operation)

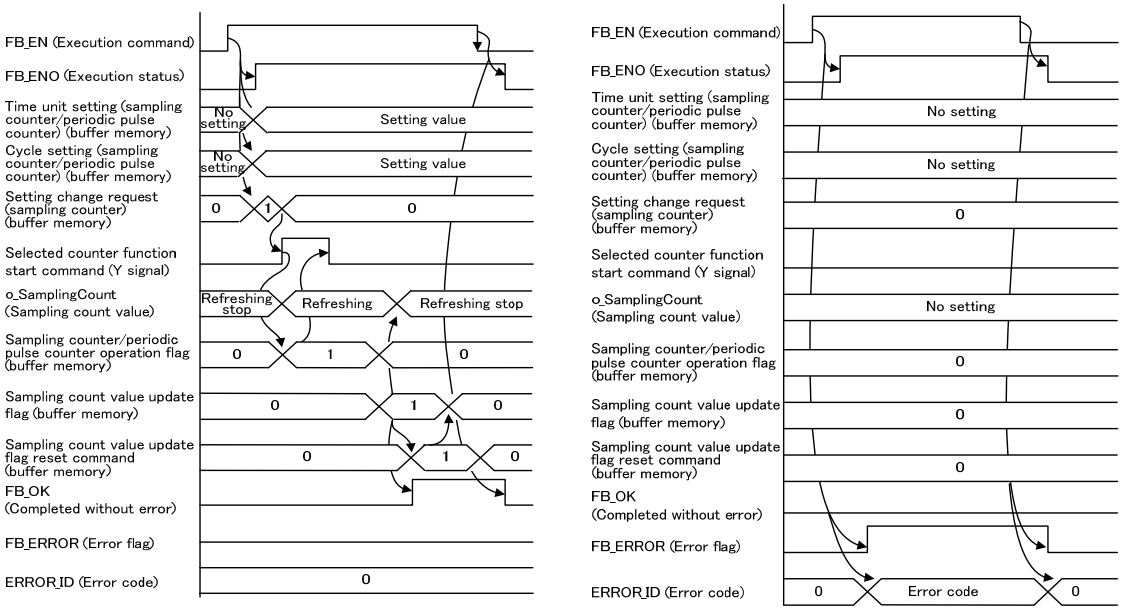
FB Name

M+QD65PD2_SamplingOperation

Function Overview

Item	Description
Function overview	Executes sampling counter function.
Symbol	
Applicable hardware and software	Compatible hardware: QD65PD2
	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: 231* *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	•By turning ON FB_EN (Execution command), the sampling count is started with the preset i_SetUnitTime (Time unit setting (sampling counter)) and i_SamplingTime (Cycle setting (sampling counter)) and the sampling count value is read from the buffer memory. •When the sampling time has elapsed, FB_OK (Completed without error) is turned ON and the processing ends. •When the target CH 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) Turn OFF the selected counter function start command (Y signal) when using this FB. When it is turned ON, the sampling counter function of the corresponding channel is not performed. 5) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target CH. 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 intelligent function module switch setting needs to be set when executing the sampling counter function. For details, refer to the user's manual. 9) When this FB is used in two or more places, a duplicated coil warning will 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. 10) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples

Item	Description
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH number.

Name	Variable name	Data type	Setting range	Description
Time unit setting (sampling counter)	i_SetUnitTime	W	0: 1 ms 1: 10 ms	Specify the unit for the sampling operation time.
Cycle setting (sampling counter)	i_SamplingTime	W	1~65,535 *1	Set the sampling time. When the time unit setting (sampling counter) is set to 1: 10 ms, the setting range is 10 ~ 655350 ms *1: Setting method •1~32,767: 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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the execution of the sampling counter function is completed.
Sampling count value	o_SamplingCount	D	0	Store the sampling count value.
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	2010/10/31	First edition

Note

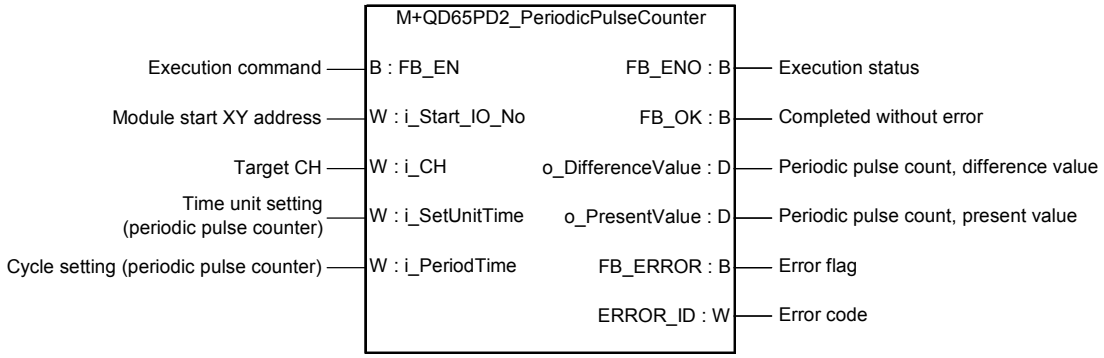
This chapter includes information related to the M+QD65PD2_SamplingOperation function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

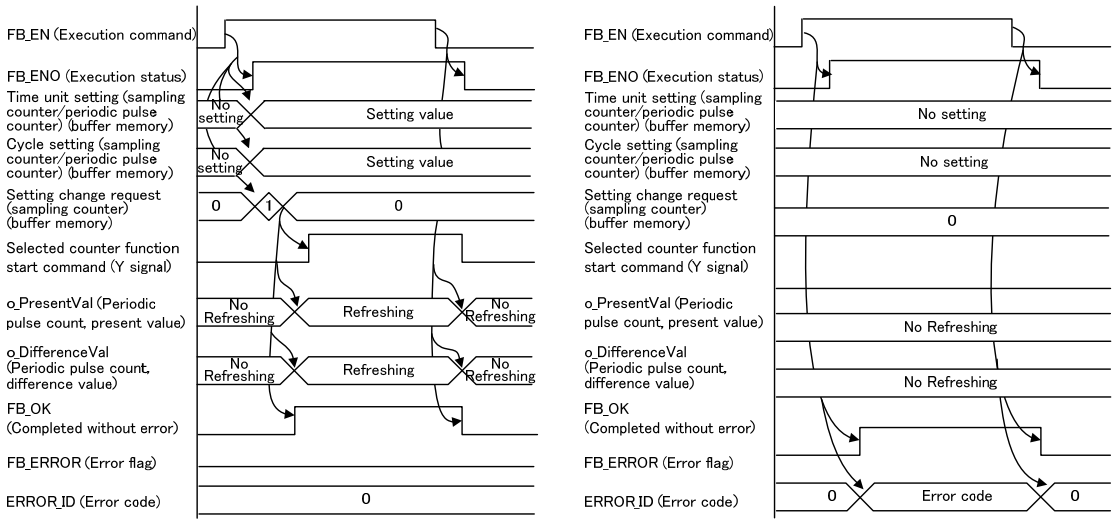
8.M+QD65PD2_PeriodicPulseCounter (Periodic pulse counter function operation)

FB Name

M+QD65PD2_PeriodicPulseCounter

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Executes periodic pulse counter function.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 237*
*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>
<tr><td>Function description</td><td>•By turning ON FB_EN (Execution command), the periodic pulse count is started with the preset i_PeriodTime (Cycle setting (periodic pulse counter)), and the periodic pulse count present value and periodic pulse count difference value are read from the buffer memory.
•When the target CH 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.</td></tr>
<tr><td>Compiling method</td><td>Macro type</td></tr>
</table>

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) Turn OFF the selected counter function start command (Y signal) when using the FB. 5) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target CH. 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 intelligent function module switch setting needs to be set when executing the periodic pulse counter function. For details, refer to the user's manual. 9) When this FB is used in two or more places, a duplicated coil warning will 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. 10) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH number.
Time unit setting (periodic pulse counter)	i_SetUnitTime	W	0: 1ms 1: 10ms	Set the unit for the periodic time.
Cycle setting (periodic pulse counter)	i_PeriodTime	W	1~65,535 *1	Set periodic time setting. When the time unit setting (periodic pulse counter) is set to 1: 10 ms, the setting range is 10 ~ 655350 ms. *1: Setting method •1~32,767: 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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the periodic pulse counter function is being performed.
Periodic pulse count, difference value	o_DifferenceVal	D	0	Store the periodic pulse difference count value.
Periodic pulse count, present value	o_PresentVal	D	0	Store the present value of when the periodic time has elapsed.
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	2010/10/31	First edition

Note

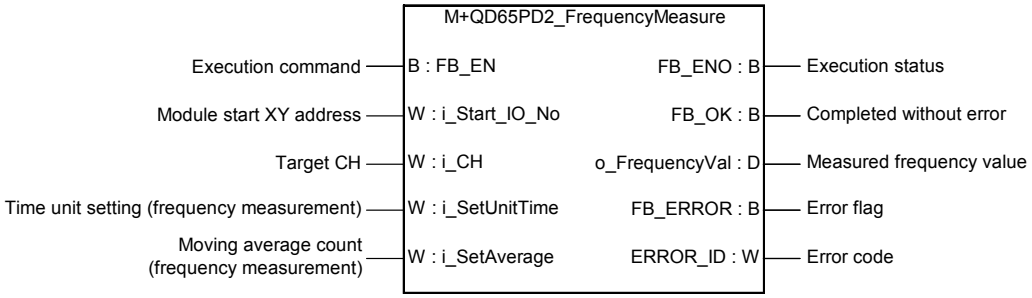
This chapter includes information related to the M+QD65PD2_PeriodicPulseCounter function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

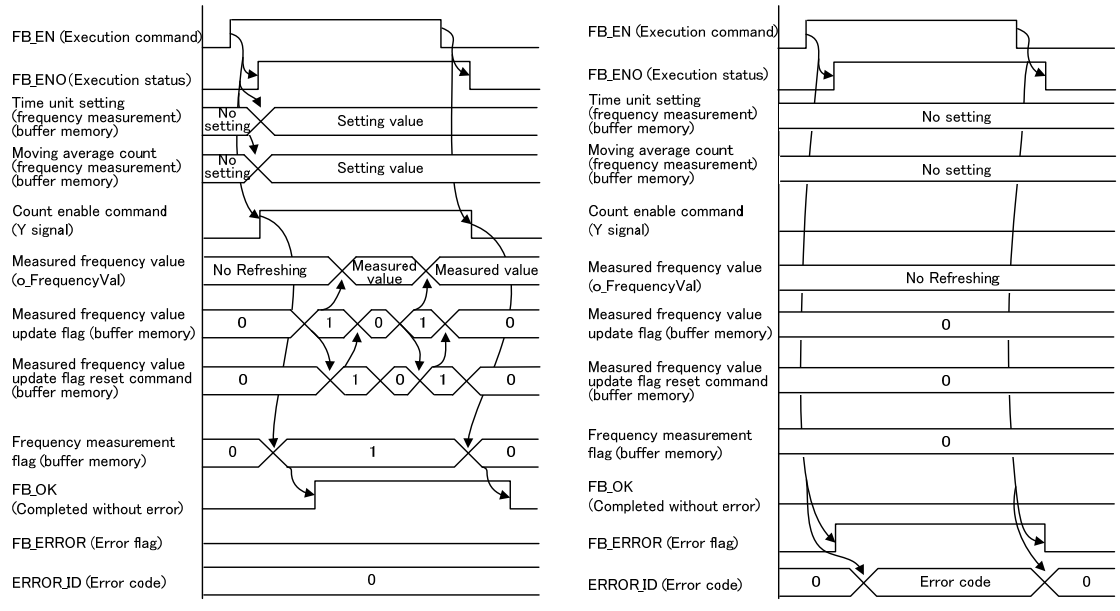
9.M+QD65PD2_FrequencyMeasure (Frequency measurement)

FB Name

M+QD65PD2_FrequencyMeasure

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Starts the frequency measurement function and reads the measured frequency value that has been calculated.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 185*
*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>
<tr><td>Function description</td><td>•By turning ON FB_EN (Execution command), the frequency measurement function is executed with the preset i_SetUnitTime (Time unit setting (frequency measurement)) and i_SetAverage (Moving average count (frequency measurement)), and the measured frequency value is read from the buffer memory.
•When the target CH 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.</td></tr>
<tr><td>Compiling method</td><td>Macro type</td></tr>
</table>

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 CH. 5) This FB uses index registers Z9, Z8, Z7, and Z6. 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 intelligent function module switch setting needs to be set when executing the frequency measurement function. For details, refer to the user's manual. 8) When this FB is used in two or more places, a duplicated coil warning will 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) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 

Item	Description
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH number.
Time unit setting (frequency measurement)	i_SetUnitTime	W	0: 0.01s 1: 0.1s 2: 1s	Specify the unit time for the frequency measurement.
Moving average count (frequency measurement)	i_SetAverage	W	1~100	Specify the moving average count for the frequency measurement.

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates the frequency is being measured.

Name	Variable name	Data type	Initial value	Description
Measured frequency value	o_FrequencyVal	D	0	Store the measured frequency value.
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	2010/10/31	First edition

Note

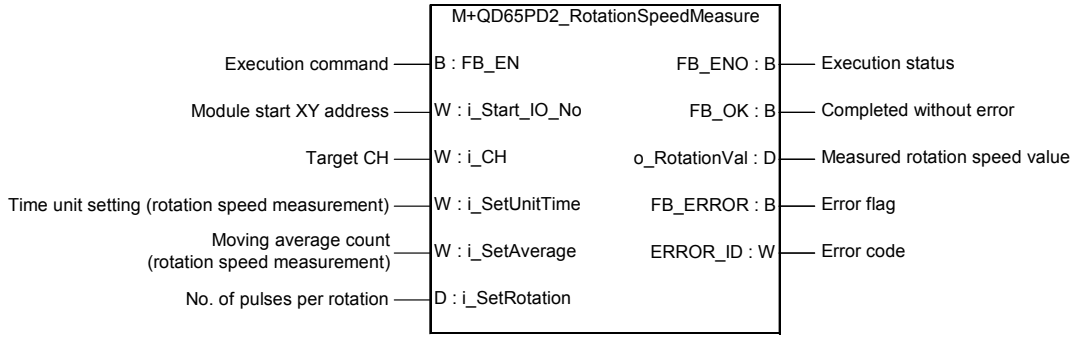
This chapter includes information related to the M+QD65PD2_FrequencyMeasure function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

10.M+QD65PD2_RotationSpeedMeasure (Rotation speed measurement)

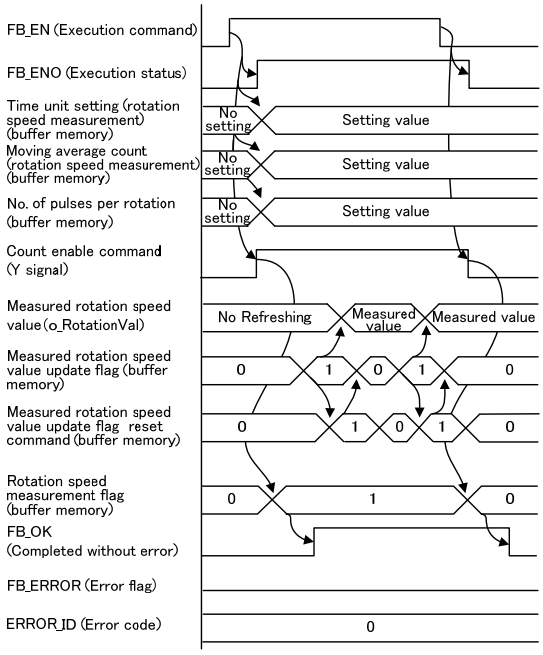
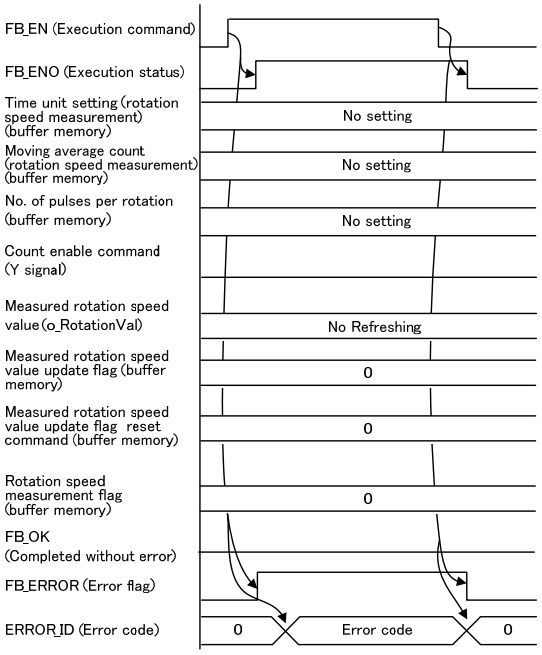
FB Name

M+QD65PD2_RotationSpeedMeasure

Function Overview

Item	Description
Function overview	Starts the rotation speed measurement function and reads the measured rotation speed value that has been calculated.
Symbol	
Applicable hardware and software	Compatible hardware: QD65PD2
	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: 189* *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	•By turning ON FB_EN (Execution command), the rotation speed measurement is executed with the preset i_SetUnitTime (Time unit setting (rotation speed measurement)), i_SetAverage (Moving average count (rotation speed measurement)) and i_SetRotation (No. of pulses per rotation), and the measured rotation speed value is read from the buffer memory. •When the target CH 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.

Item	Description
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 CH. 5) This FB uses index registers Z9, Z8, Z7, and Z6. 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 intelligent function module switch setting needs to be set when executing the rotation speed measurement function. For details, refer to the user's manual. 8) When this FB is used in two or more places, a duplicated coil warning will 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) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples

Item	Description
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs]  
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)

Name	Variable name	Data type	Setting range	Description
Target CH	i_CH	W	1~2	Specify the CH number.
Time unit setting (rotation speed measurement)	i_SetUnitTime	W	0: 0.01s 1: 0.1s 2: 1s	Set the unit time for the rotation speed measurement.
Moving average count (rotation speed measurement)	i_SetAverage	W	1~100	Set the moving average count for the rotation speed measurement.
No. of pulses per rotation	i_SetRotation	D	1~8,000,000	Set the number of pulses per rotation.

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates the rotation speed is being measured.
Measured rotation speed value	o_RotationVal	D	0	Store the measured rotation speed value.
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	2010/10/31	First edition

Note

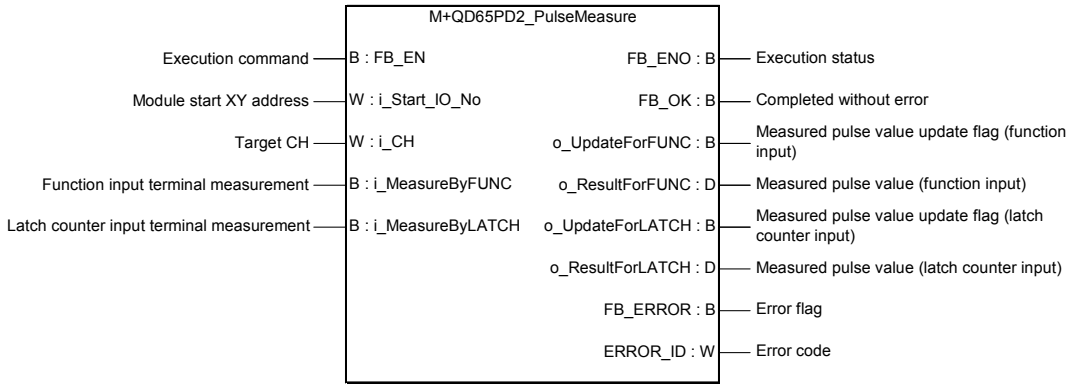
This chapter includes information related to the M+QD65PD2_RotationSpeedMeasure function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

11.M+QD65PD2_PulseMeasure (Pulse measurement)

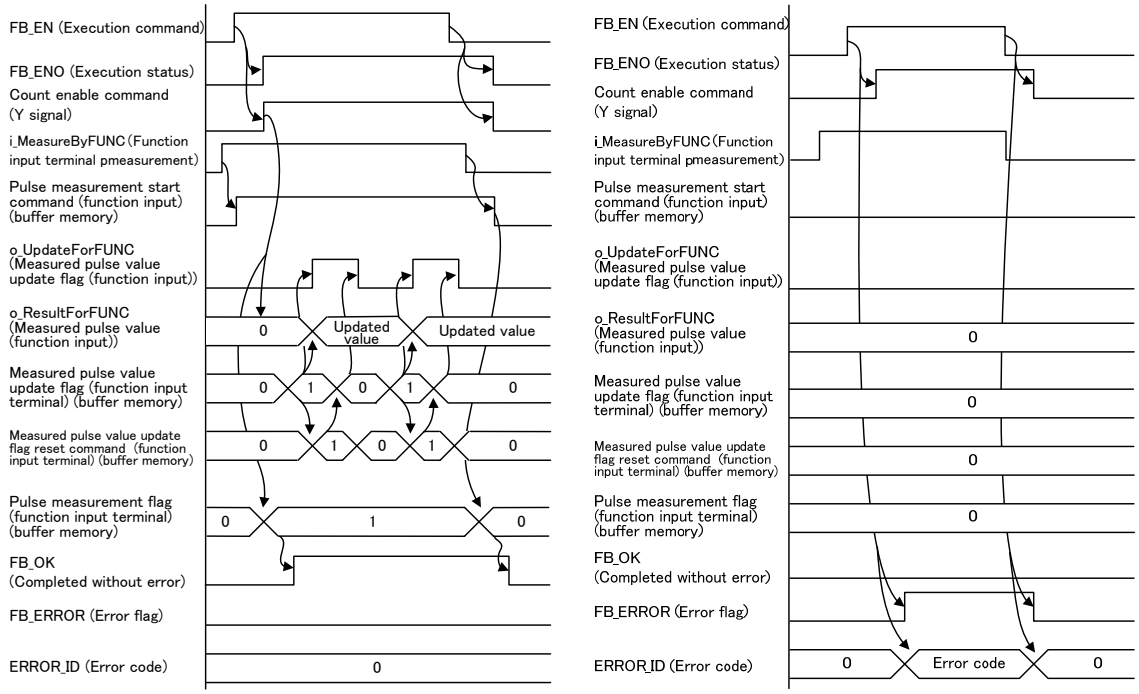
FB Name

M+QD65PD2_PulseMeasure

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Starts the pulse measurement function and reads the measured pulse value.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 297*
*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>
<tr><td>Function description</td><td>•After the count enable command (Y signal) is turned ON when FB_EN (Execution command) is turned ON, the pulse is measured by turning ON i_MeasureByFUNC (Function input terminal measurement) or i_MeasureByLATCH (Latch counter input terminal measurement).
•When the target CH 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.</td></tr>
<tr><td>Compiling method</td><td>Macro type</td></tr>
</table>

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 CH. 5) This FB uses index registers Z9, Z8, Z7, and Z6. 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 intelligent function module switch setting needs to be set when executing the pulse measurement function. For details, refer to the user's manual. 8) When this FB is used in two or more places, a duplicated coil warning will 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) If the measurement interval for the target measurement is smaller than the scan time, measurement may not be performed normally. Please adjust the measurement interval so that it is more than double the scan time. 10) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples

Item	内容
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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.

Name	Variable name	Data type	Setting range	Description
Module start XY address	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH number.
Function input terminal measurement	i_MeasureByFUNC	B	ON, OFF	Turn ON when measuring the pulse with the function input terminal.
Latch counter input terminal measurement	i_MeasureByLATCH	B	ON, OFF	Turn ON when measuring the pulse with the latch counter input terminal.

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the pulse is being measured.
Measured pulse value update flag (function input)	o_UpdateForFUNC	B	OFF	When ON, it indicates that the measured pulse value of the function input terminal has been updated.
Measured pulse value (function input)	o_ResultForFUNC	D	0	Store the measured pulse value of the function input terminal.
Measured pulse value update flag (latch counter input)	o_UpdateForLATCH	B	OFF	When ON, it indicates that the measured pulse value of the latch counter input terminal has been updated.
Measured pulse value (latch counter input)	o_ResultForLATCH	D	0	Store the measured pulse value of the latch counter input terminal.
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	2010/10/31	First edition

Note

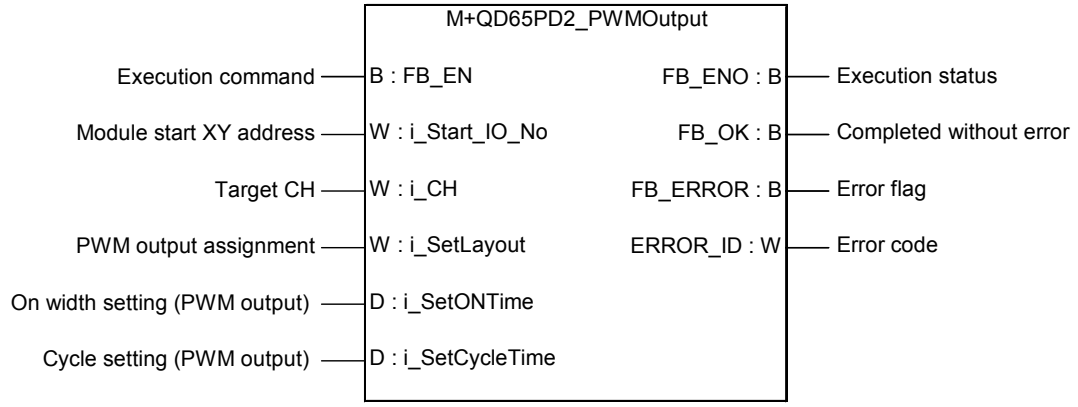
This chapter includes information related to the M+QD65PD2_PulseMeasure function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

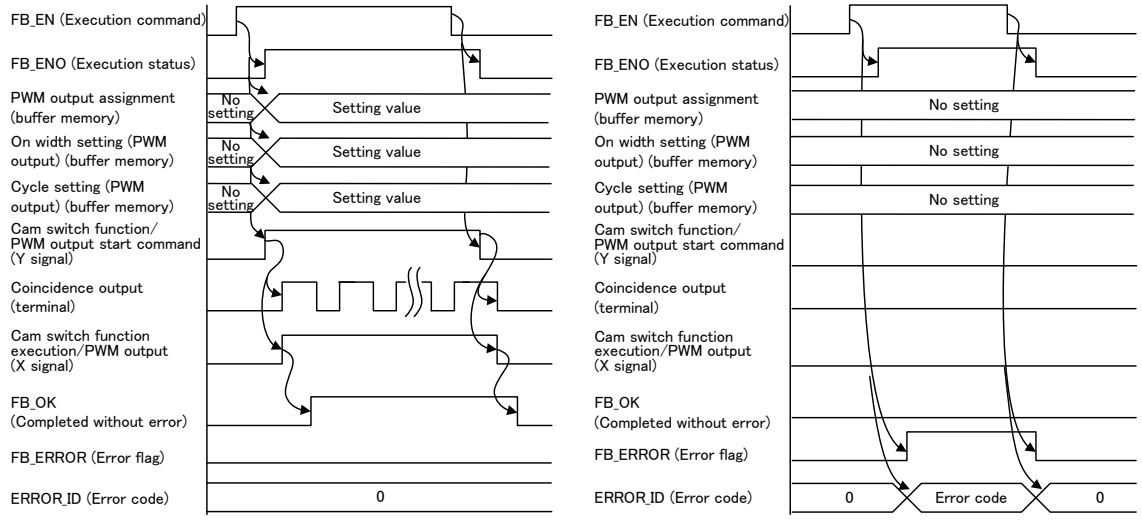
12.M+QD65PD2_PWMOutput (PWM output)

FB Name

M+QD65PD2_PWMOutput

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Performs the PWM output function.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 164*
*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>
<tr><td>Function description</td><td>•By turning ON FB_EN (Execution command), the PWM output function is executed with the preset i_SetLayout (PWM output assignment), I_SetONTime (On width setting (PWM output)) and i_SetCycleTime (Cycle setting (PWM output)).
•When the target CH 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.</td></tr>
<tr><td>Compiling method</td><td>Macro type</td></tr>
</table>

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 CH. 5) This FB uses index registers Z9, Z8, Z7, and Z6. 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 intelligent function module switch setting needs to be set when executing the PWM output function. For details, refer to the user's manual. 8) When this FB is used in two or more places, a duplicated coil warning will 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) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH number.
PWM output assignment	i_SetLayout	W	b0: Coincidence output 1 b1: Coincidence output 2 b2: Coincidence output 3 b3: Coincidence output 4 b4: Coincidence output 5 b5: Coincidence output 6 b6: Coincidence output 7 b7: Coincidence output 8 b8~b15: Not used *1 0: Not assigned 1: Assigned	Specify the comparison output to output the output pulse. *1 Set 0.
On width setting (PWM output)	i_SetONTime	D	0 or 10~10,000,000	Specify the ON width for the output pulse. (Unit: 0.1 μs)
Cycle setting (PWM output)	i_SetCycleTime	D	50~10,000,000	Specify the cycle time for the output pulse. (Unit: 0.1 μs)

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that PWM output is being performed.
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	2010/10/31	First edition

Note

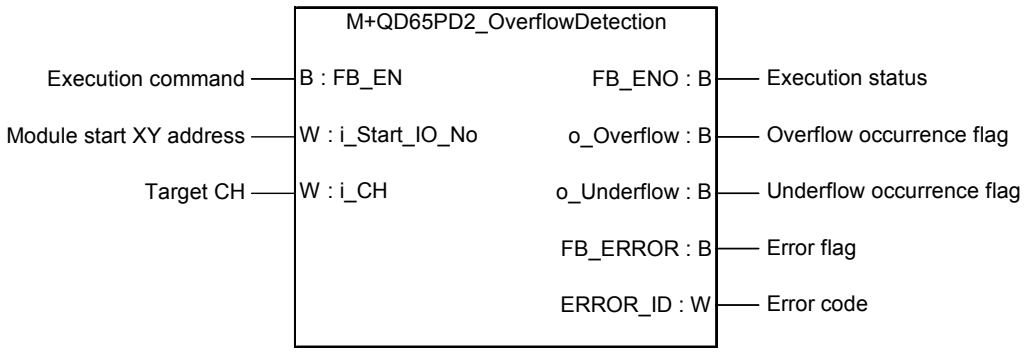
This chapter includes information related to the M+QD65PD2_PWMOutput function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

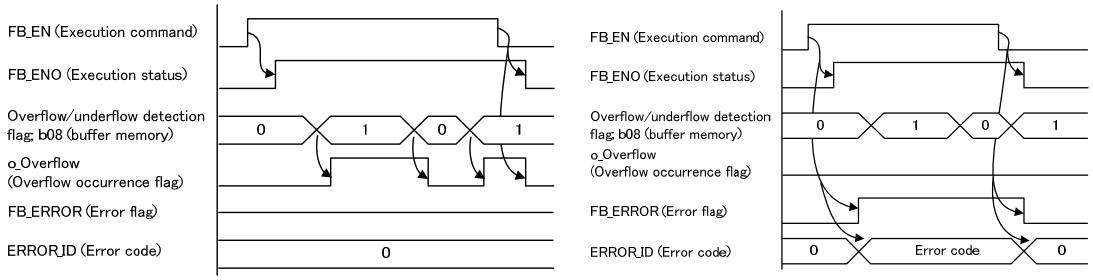
13.M+QD65PD2_OverflowDetection (Overflow/underflow detection)

FB Name

M+QD65PD2_OverflowDetection

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Detects overflow and underflow.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="3">Applicable hardware and software</td><td>Compatible hardware: QD65PD2</td></tr>
<tr><td>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: 127*
*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>
<tr><td>Function description</td><td>•By turning ON FB_EN (Execution command), o_Overflow (Overflow occurrence flag)/o_Underflow (Underflow occurrence flag) is turned ON when overflow/underflow occurs.
•When the target CH 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.</td></tr>
<tr><td>Compiling method</td><td>Macro type</td></tr>
</table>

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 CH. 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) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples
Timing chart	•Operation of I/O signals (When an overflow occurs) [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH 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.
Overflow occurrence flag	o_Overflow	B	OFF	ON: Overflow occurred. OFF: No overflow detected.
Underflow occurrence flag	o_Underflow	B	OFF	ON: Underflow occurred. OFF: No underflow detected.
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	2010/10/31	First edition

Note

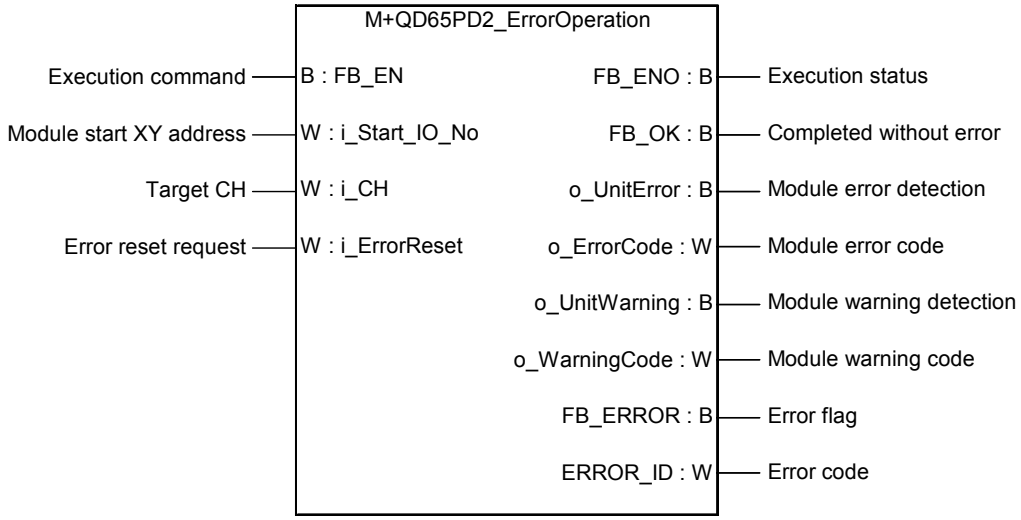
This chapter includes information related to the M+QD65PD2_OverflowDetection function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

14.M+QD65PD2_ErrorOperation (Error operation)

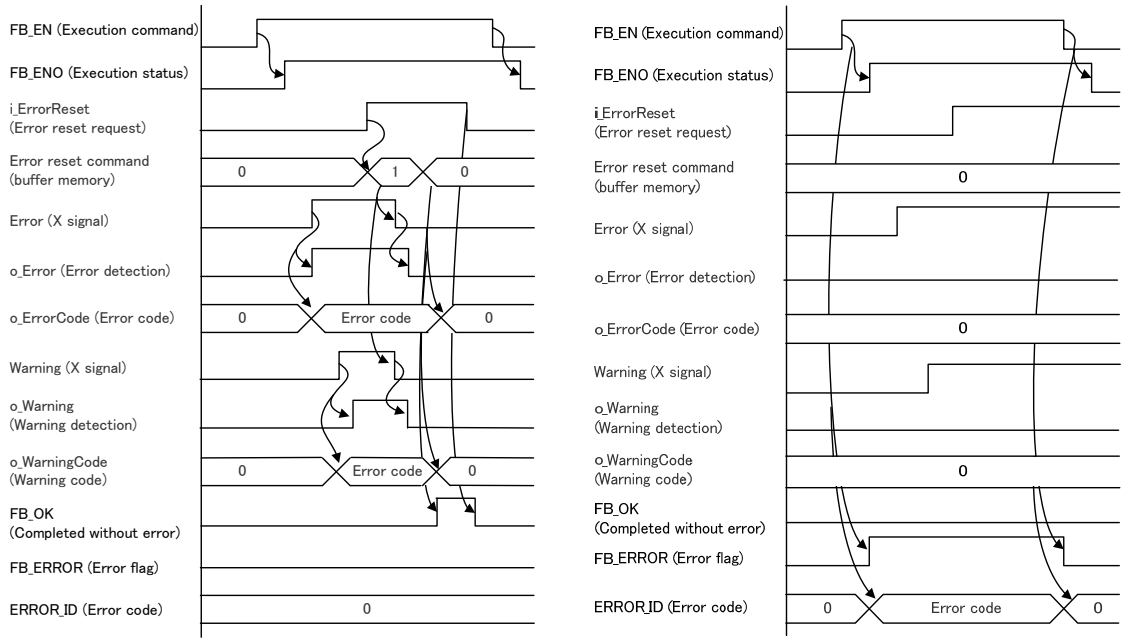
FB Name

M+QD65PD2_ErrorOperation

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Monitors errors and warnings, and performs error reset.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="2">Applicable hardware and software</td><td>Compatible hardware: QD65PD2
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: 263*
*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	•When FB_EN (Execution command) is turned ON, an error and warning in the target axis are monitored. •When an error occurs, o_UnitError (Module error detection) is turned ON and an error code is stored in o_ErrorCode (Module error code). •When a warning occurs, o_UnitWarning (Module warning detection) is turned ON and a warning code is stored in o_WarningCode (Module warning code). •After FB_EN (Execution command) is turned ON, an error is reset by turning ON i_ErrorReset (Error reset command) while an error or warning is occurring. •When the target CH 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 CH. 5) This FB uses index registers Z9, Z8, Z7, and Z6. 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) Perform settings using the GX Works2 intelligent function module switch setting to match systems and devices connected to the QD65PD2. 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 - Application examples

Item	内容
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2. 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.

Name	Variable name	Data type	Setting range	Description
Module start XY address	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 QD65PD2 module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	W	1~2	Specify the CH number.
Error reset request	i_ErrorReset	B	ON, OFF	Turn ON when performing error reset. Turn OFF the request when the normal completion (FB_OK) has turned ON.

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that an error reset is completed.
Module error detection	o_UnitError	B	OFF	When ON, it indicates that an error has occurred.
Module error code	o_ErrorCode	W	0	Return a code for a target channel error occurred in the module.
Module warning detection	o_UnitWarning	B	OFF	When ON, it indicates that a warning is occurring.
Module warning code	o_WarningCode	W	0	Return a code for a target channel 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	2010/10/31	First edition

Note

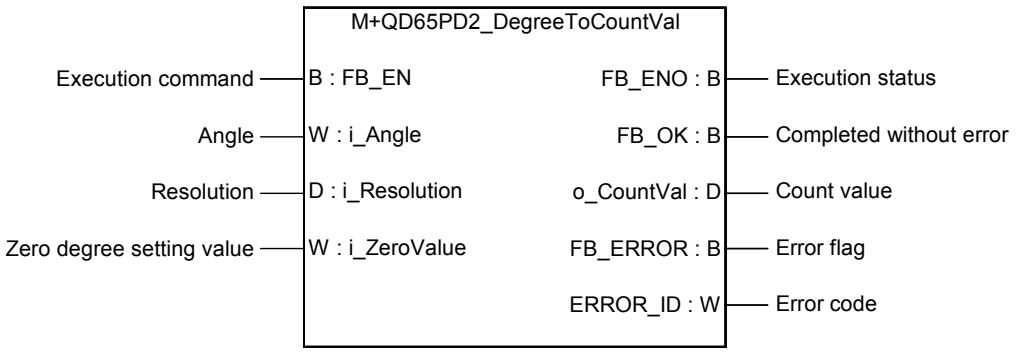
This chapter includes information related to the M+QD65PD2_ErrorOperation function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

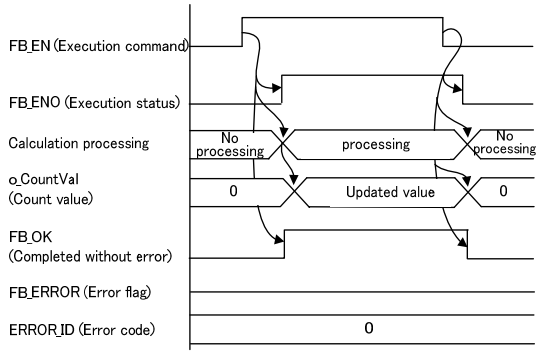
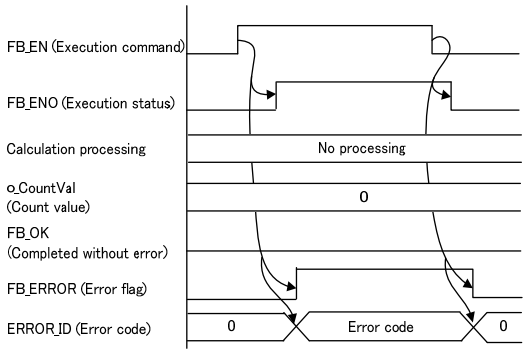
15.M+QD65PD2_DegreeToCountVal (Angle conversion)

FB Name

M+QD65PD2_DegreeToCountVal

Function Overview

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Function overview</td><td>Calculates the count value from the angle.</td></tr>
<tr><td>Symbol</td><td> 
</td></tr>
<tr><td rowspan="2">Applicable hardware and software</td><td>Compatible hardware: QD65PD2
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: 127*
*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	•By turning ON FB_EN (Execution command), the count value is calculated from the angle (input by 0.1 degree). The calculation is performed by using a resolution for the ring counter upper value and 0 for the lower value. •The count value is calculated as follows. How to calculate the counter value (o_CountVal). •i_Angle ÷ (3600 ÷ i_Resolution) + i_ZeroValue When the calculated value is larger than the resolution (i_Resolution), the value of the resolution (i_Resolution) is subtracted from the calculated value and the difference is stored in the counter value (o_CountVal). •When the input 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) Every input must be provided with a value for proper FB operation.
FB operation type	Real-time execution
Application example	Refer to Appendix 1 - Application examples
Timing chart	•Operation of I/O signals [When operation completes without error]  [When an error occurs] 
Relevant manual	Q series QD65PD2 multifunction counter/timer module user's manual

Error codes

■Error code list

Error code	Description
20 (Decimal)	The specified resolution is not valid. The resolution is not within the range of 10 to 32,768. Please try again after confirming the setting.
21 (Decimal)	The specified zero degree setting value is not valid. The zero degree setting value is not within the range of 0 to (i_Resolution-1). Please try again after confirming the setting.
22 (Decimal)	The specified angle is not valid. The angle is not within the range of 0 to 3,599. 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.
Angle	i_Angle	W	0~3,599	Specify the angle. (Unit: 0.1 degree)
Resolution	i_Resolution	D	10~32,768	Specify the encoder resolution.
Zero degree setting value	i_ZeroValue	W	0~(i_Resolution-1)	Specify the value that is considered as zero degree.

■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.
Completed without error	FB_OK	B	OFF	When ON, it indicates that calculation is being performed.
Count value	o_CountVal	D	0	Store the count value that has been calculated from the angle.
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	2010/10/31	First edition

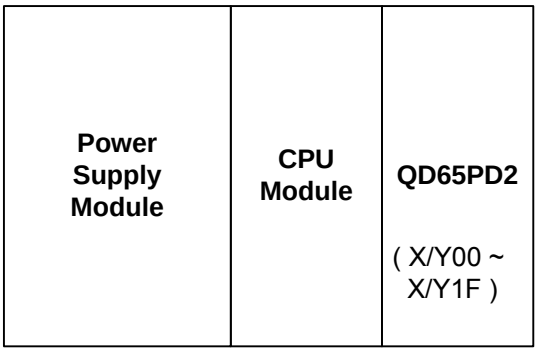
Note

This chapter includes information related to the M+QD65PD2_DegreeToCountVal function block.
It does not include information on restrictions of use such as combination with multifunction counter/timer modules or programmable controller CPUs.
Before using any Mitsubishi products, please read all the relevant manuals.

16.Application examples

QD65PD2 FB Application example

System configuration



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.

List of devices

External input (commands)

Device	FB function name	Application (ON details)
M0	Ring counter setting	Ring counter setting request
M10	Count enable	Count enable command
M20	Preset value monitoring	Present value read request
M30	Coincidence output function setting	Coincidence output set request
M40	Preset/replace	Preset/replace execution cmd
M50	Latch counter function operation	Latch counter command
M60	Sampling counter function	Sampling count command
M70	Periodic pulse counter function operation	Periodic pulse count command
M80	Frequency measurement	Frequency measurement command
M90	Rotation speed measurement	Rot. speed measurement command
M100	Pulse measurement	Pulse measurement command
M101		Fnc input terminal measurement
M102		Latch counter input tml measure
M110	PWM output	PWM output command
M120	Overflow/underflow detection	Overflow/underflow detection command
M130	Error operation	Error operation FB start
M131		Error reset command
M140	Angle conversion	Angle operation FB exe command

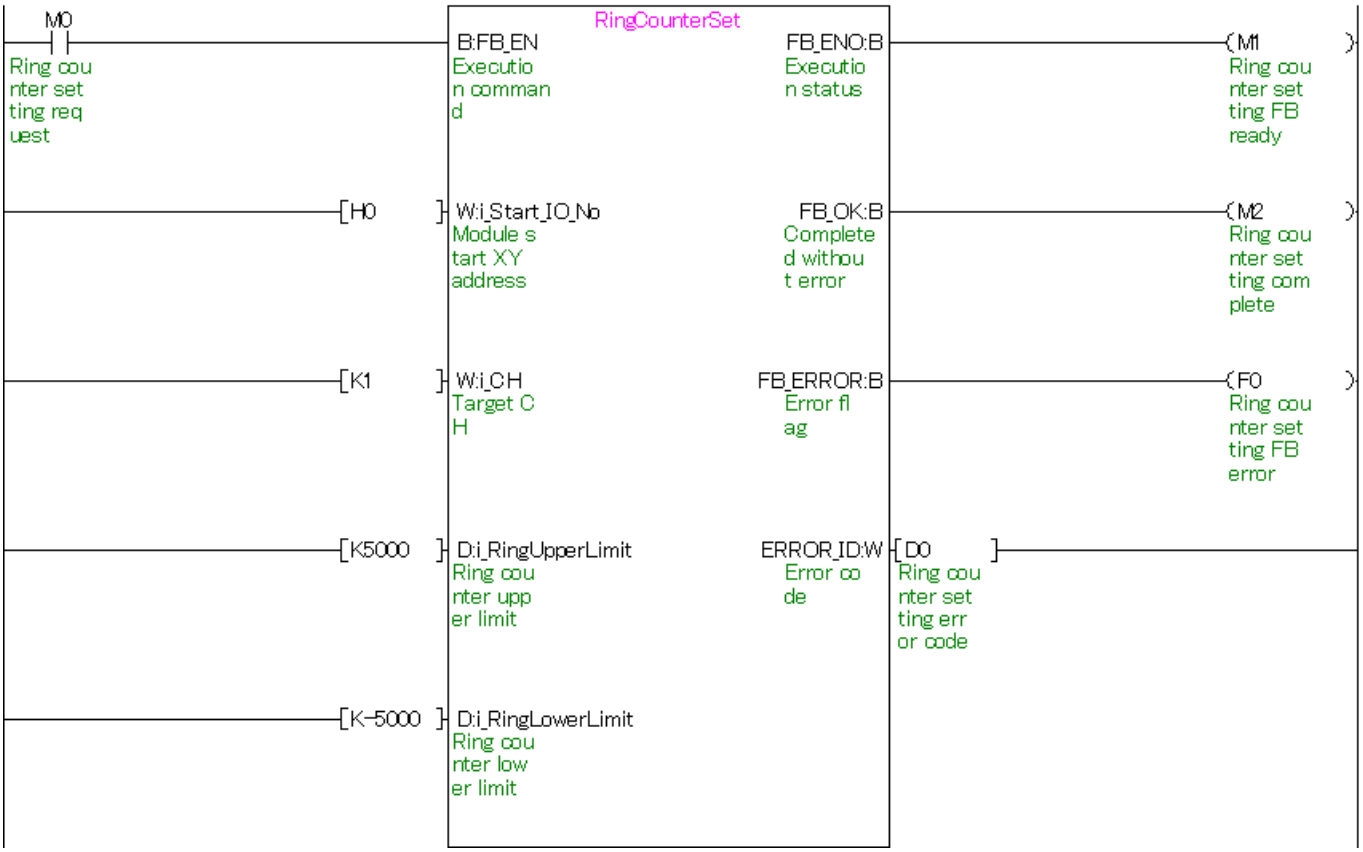
Data register

Device	FB function name	Application
D0	Ring counter setting	Ring counter setting error code
D10	Count enable	Count enable FB error code
D20	Preset value monitoring	Present value
D21		
D22		Monitoring error code
D40	Preset/replace	Preset/replace FB error code
D50	Latch counter function operation	Latch count value
D51		
D52		Latch counter execution err code
D60	Sampling counter function operation	Sampling count value
D61		
D62		Sampling execution error code
D70	Periodic pulse counter function operation	Periodic pls cnt, difference val
D71		
D72		Periodic pls cnt, present value
D73		
D74		Periodic pls counter error code
D80	Frequency measurement	Measured frequency value
D81		
D82		Freq. measurement FB error code
D90	Rotation speed measurement	Measured rotation speed value
D91		
D92		Rot. spd measurement FB err code
D100	Pulse measurement	Measured pls val (fnc input)
D101		
D102		Measured pls val (lch cntr inp)
D103		
D104		Pulse measurement FB error code
D110	PWM output	PWM output FB error code
D120	Overflow/underflow detection	Ovf/udf detection FB error code
D130	Error operation	Module error code
D131		Module warning code
D132		Error operation function FB error code
D140	Angle conversion	Count value
D141		
D142		Angle conversion function FB error code

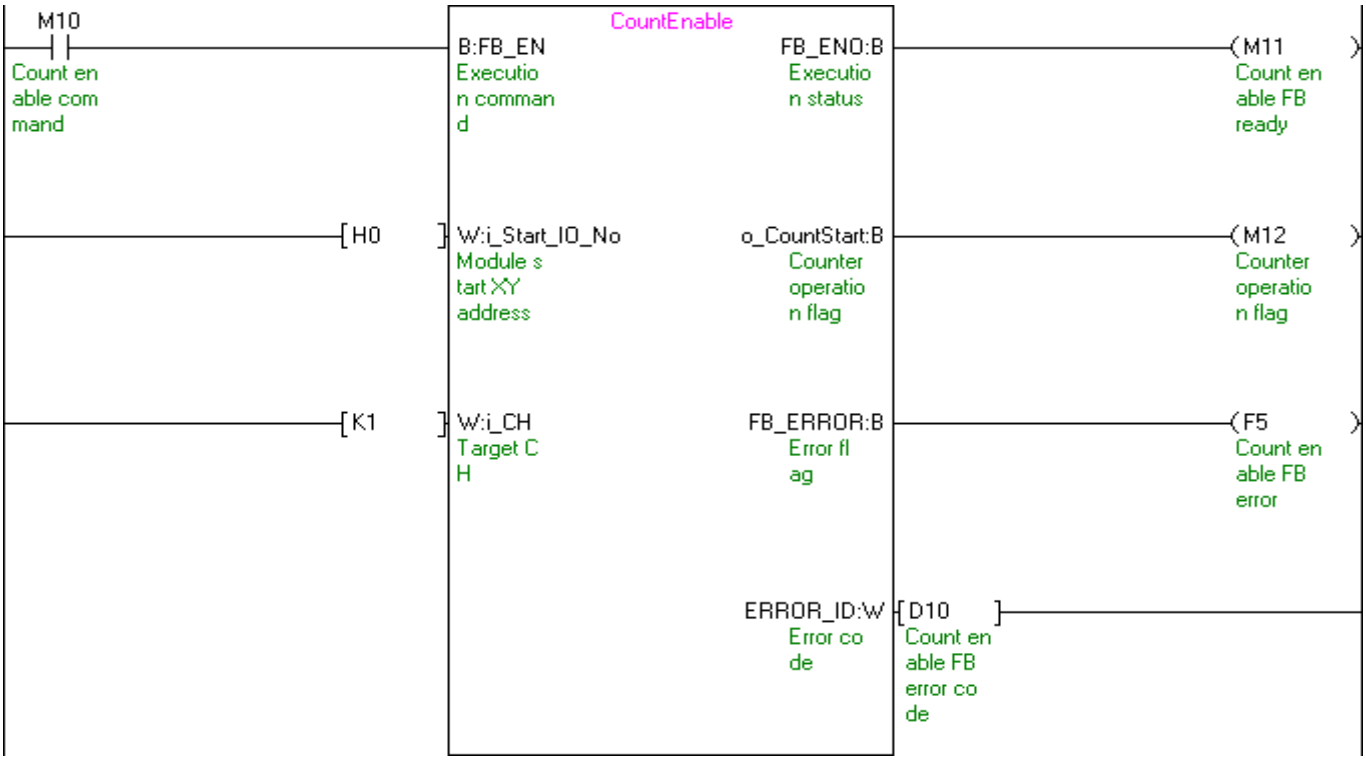
External output (checks)

Device	FB function name	Application (ON details)
M1	Ring counter setting	Ring counter setting FB ready
M2		Ring counter setting complete
F0		Ring counter setting FB error
M11	Count enable	Count enable FB ready
M12		Counter operation flag
F5		Count enable FB error
M21	Preset value monitoring	Present value monitoring ready
M22		Present value read OP complete
F10		Present value monitoring error
M31	Coincidence output function setting	Coincidence output fcn set ready
M32		Coincidence output fcn set comp
M41	Preset/replace	Preset/replace FB ready
M42		Preset/replace exe complete
F15		Preset/replace FB error
M51	Latch counter function operation	Latch counter execution ready
M52		Latch counter execution complete
F20		Latch counter execution error
M61	Sampling counter function operation	Sampling counter execution ready
M62		Sampling counter execution comp
F25		Sampling counter execution error
M71	Periodic pulse counter function operation	Periodic pls counter ready
M72		Periodic pls counter complete
F30		Periodic pls counter error
M81	Frequency measurement	Frequency measurement FB ready
M82		Frequency measurement complete
F35		Frequency measurement FB error
M91	Rotation speed measurement	Rot. speed measurement FB ready
M92		Rot. speed measurement complete
F40		Rot. speed measurement FB error
M103	Pulse measurement	Pulse measurement FB ready
M104		Pulse measurement complete
M105		Function input update flag
M106		Latch counter input update flag
F45		Pulse measurement FB error
M111	PWM output	PWM output function FB ready
M112		PWM output execution complete
F50		PWM output FB error
M121	Overflow/underflow detection	Ovf/udf detection FB ready
M122		Overflow being detected
M123		Underflow being detected
F55		Overflow/underflow FB error
M132	Error operation	Error operation FB ready
M133		Error reset execution complete
M134		Module error detection
M135		Module warning detection
F60		Error operation FB error
M141	Angle conversion	Angle conversion FB ready
M142		Angle conversion exe complete
F65		Angle conversion FB error

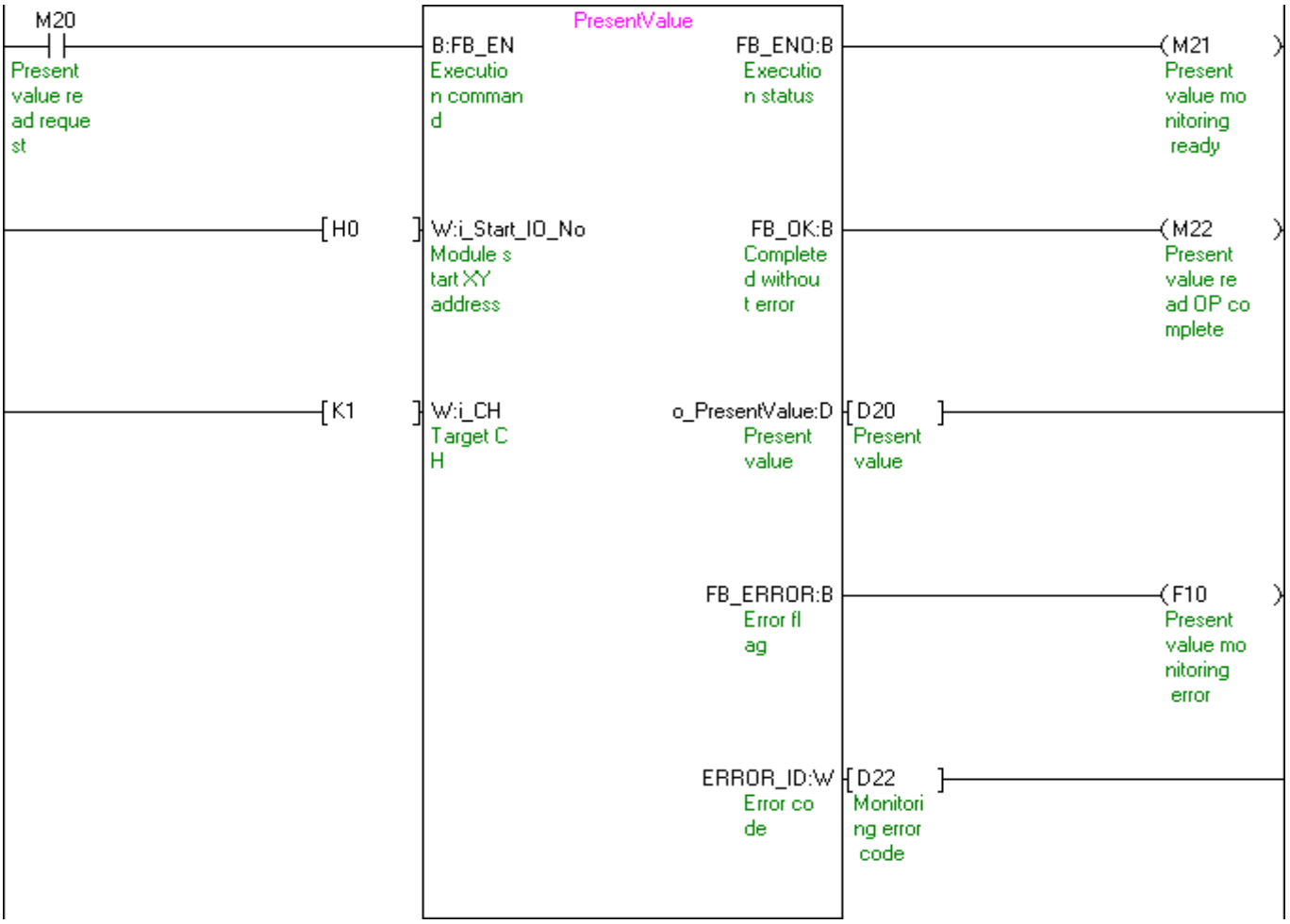
M+QD65PD2_RingCounterSetting (Ring counter setting)



M+QD65PD2_CountEnable (Count enable)

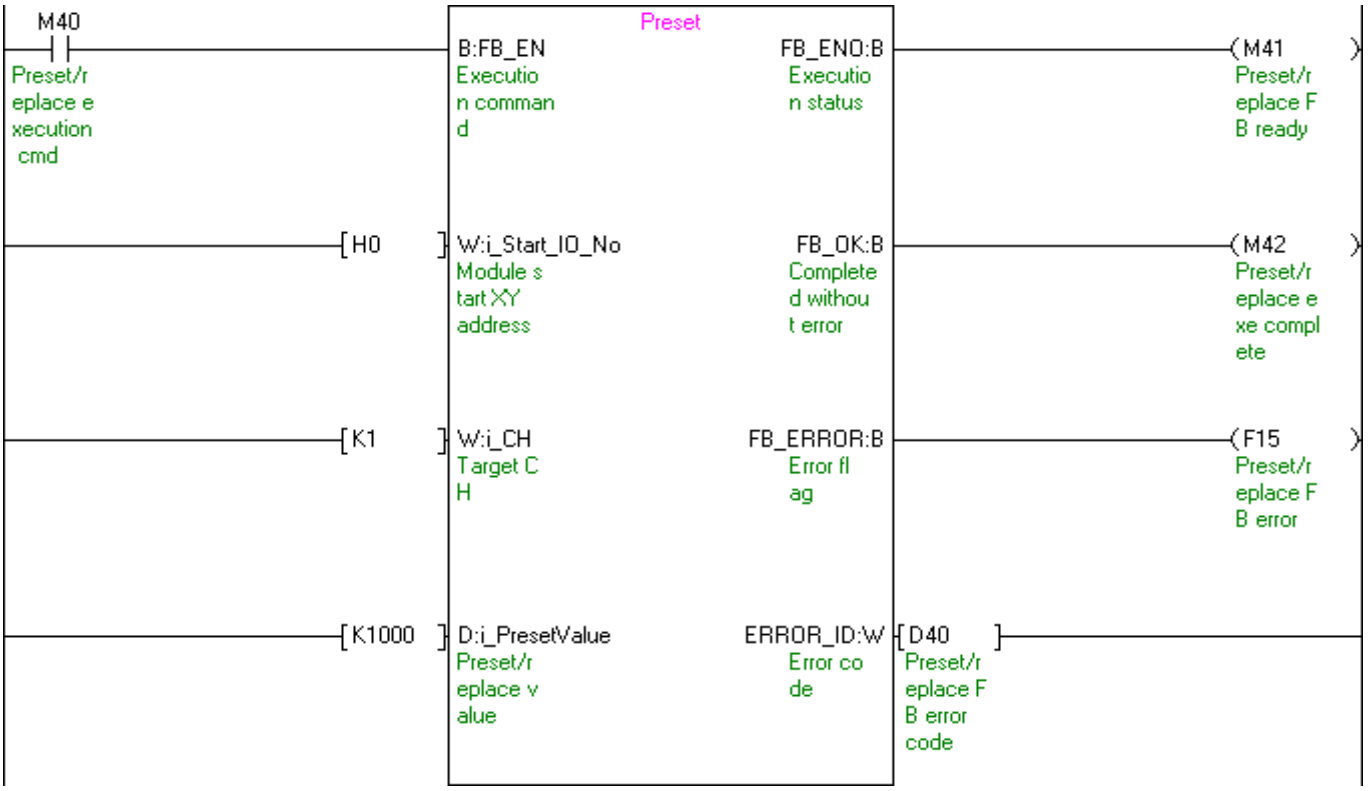


M+QD65PD2_PresentValueStorage (Present value monitoring)

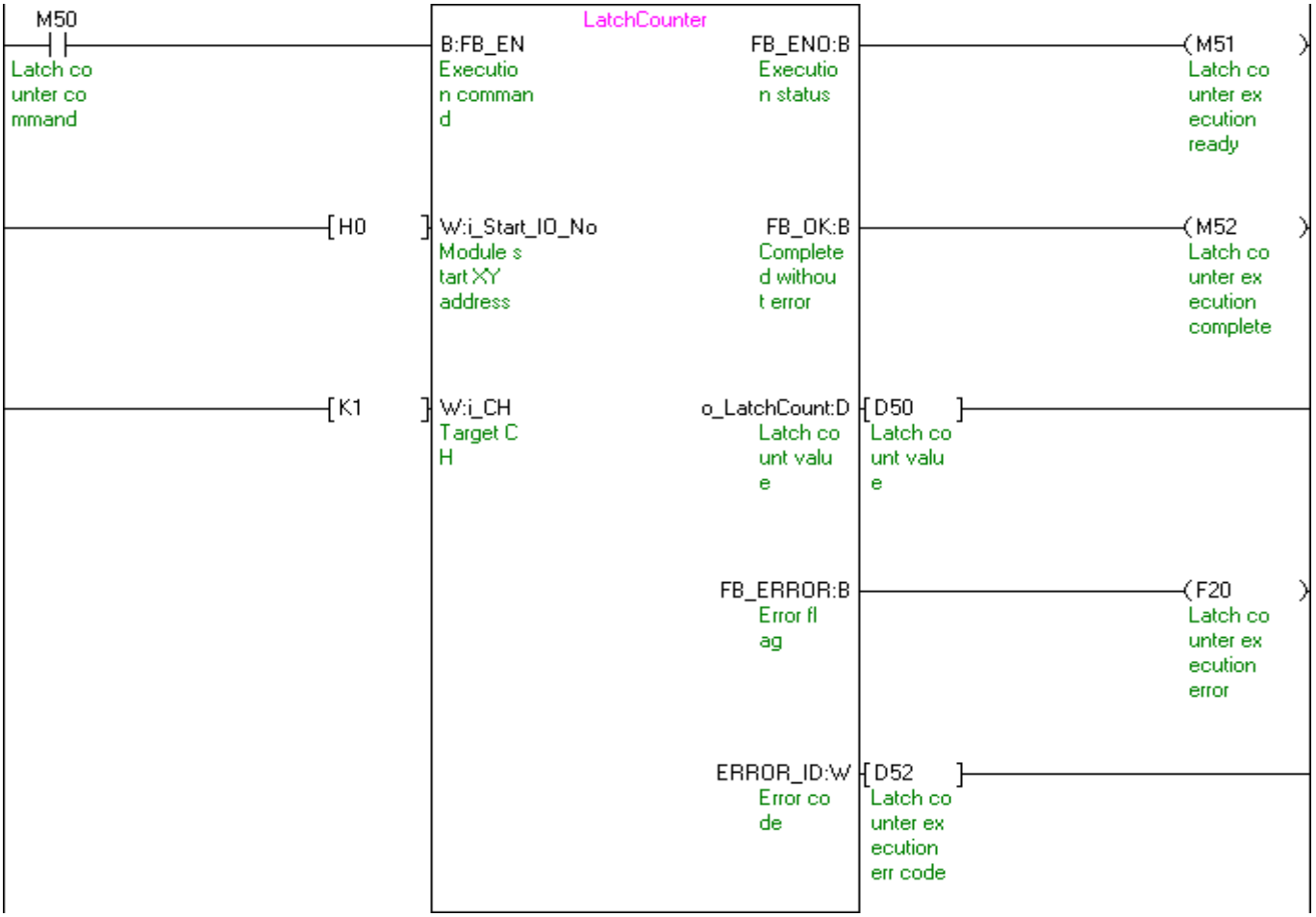


M+QD65PD2_SetCoincidenceOutput (Coincidence output function setting)

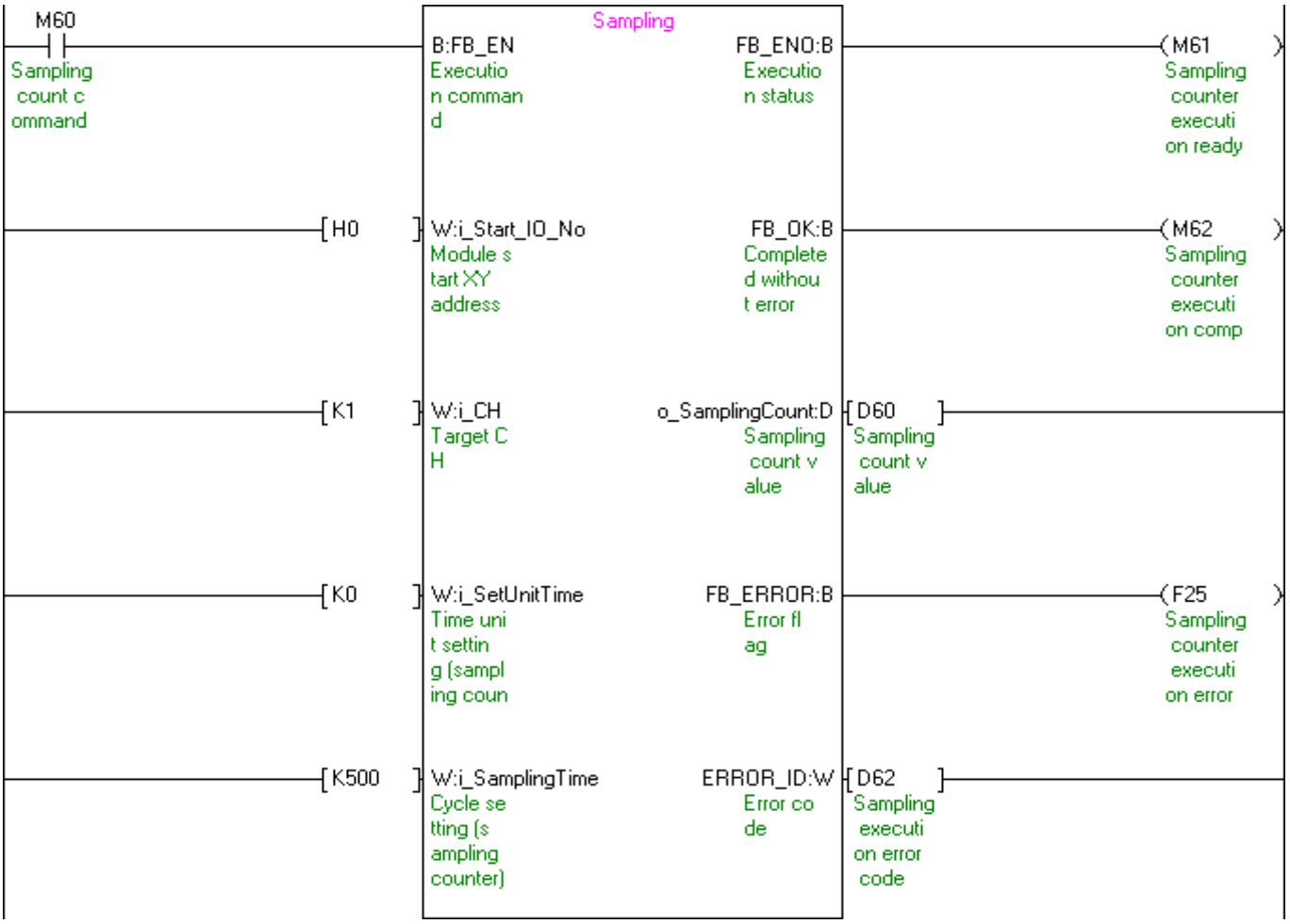
M+QD65PD2_Preset (Preset/replace)



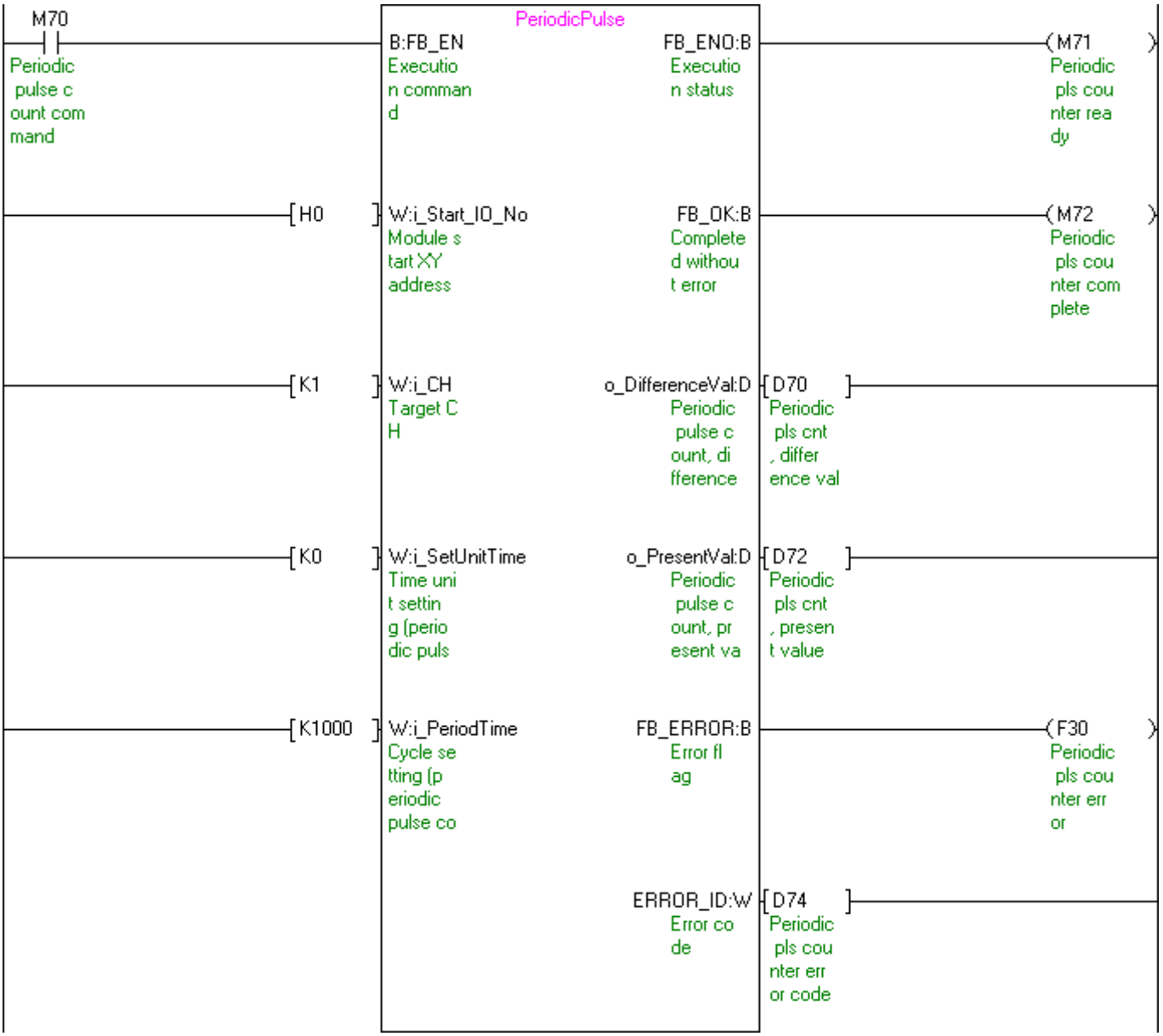
M+QD65PD2_LatchCounterOperation (Latch counter function operation)



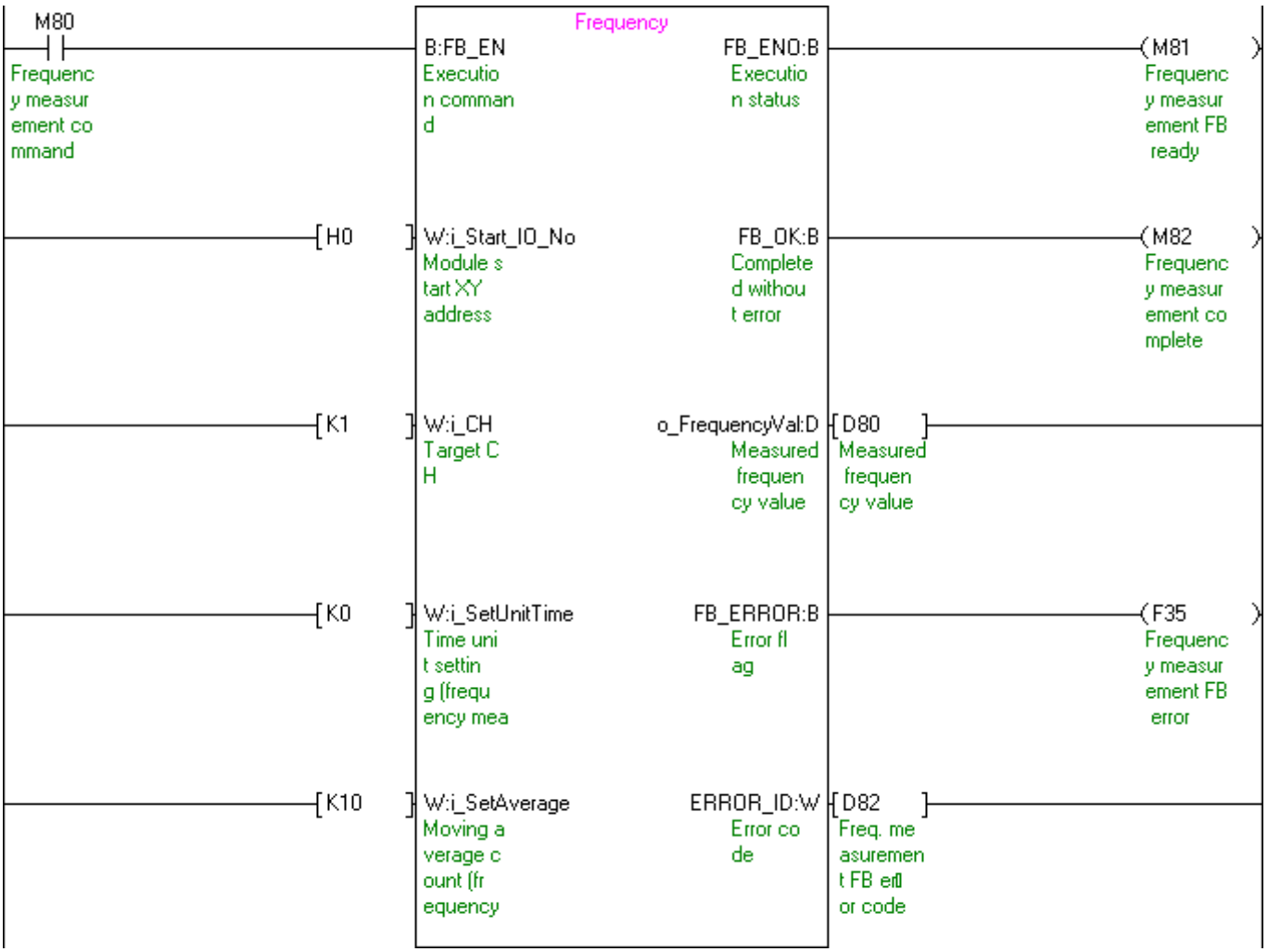
M+QD65PD2_SamplingOperation (Sampling counter function operation)



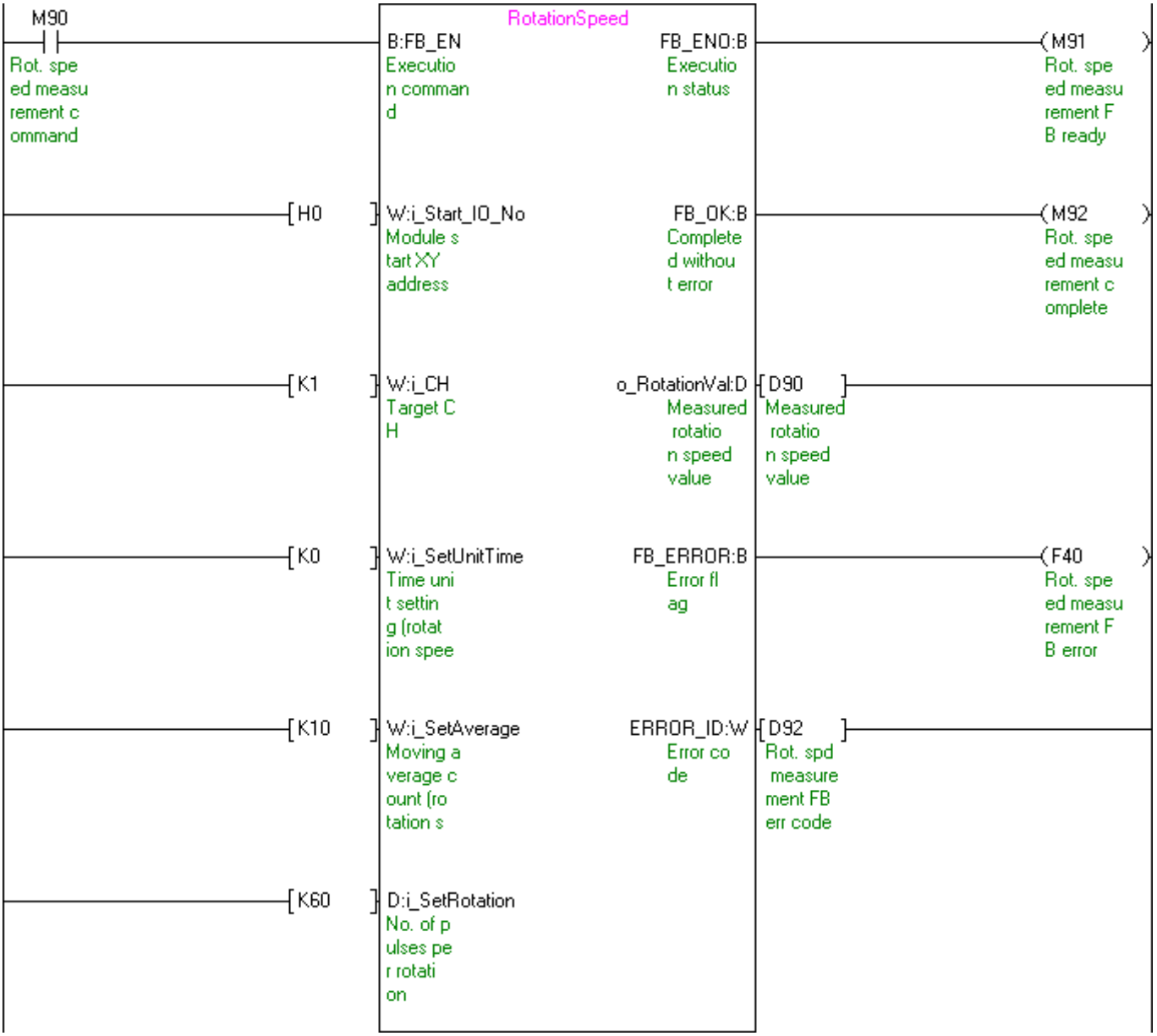
M+QD65PD2_PeriodicPulseCounter (Periodic pulse counter function operation)



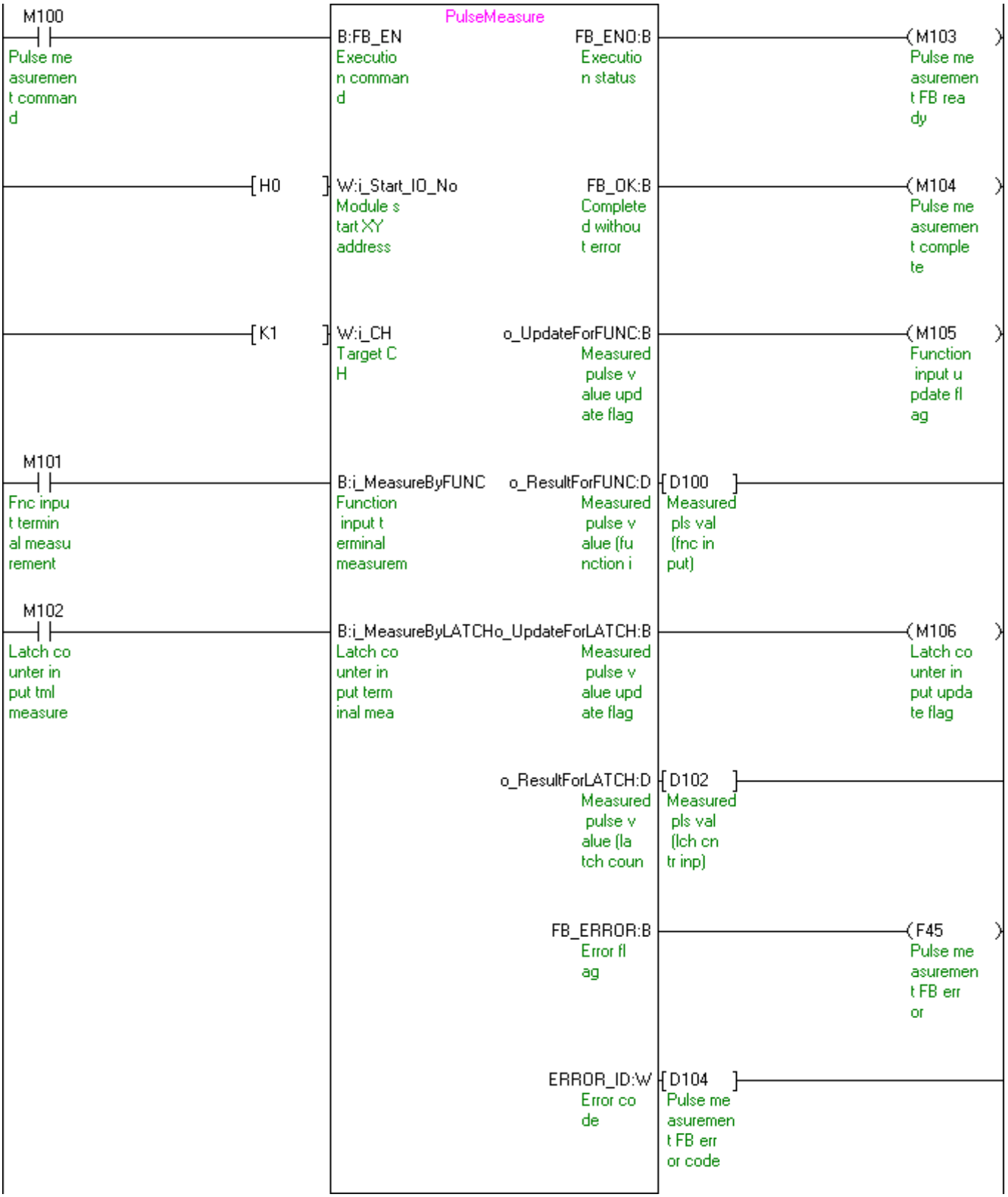
M+QD65PD2_FrequencyMeasure (Frequency measurement)



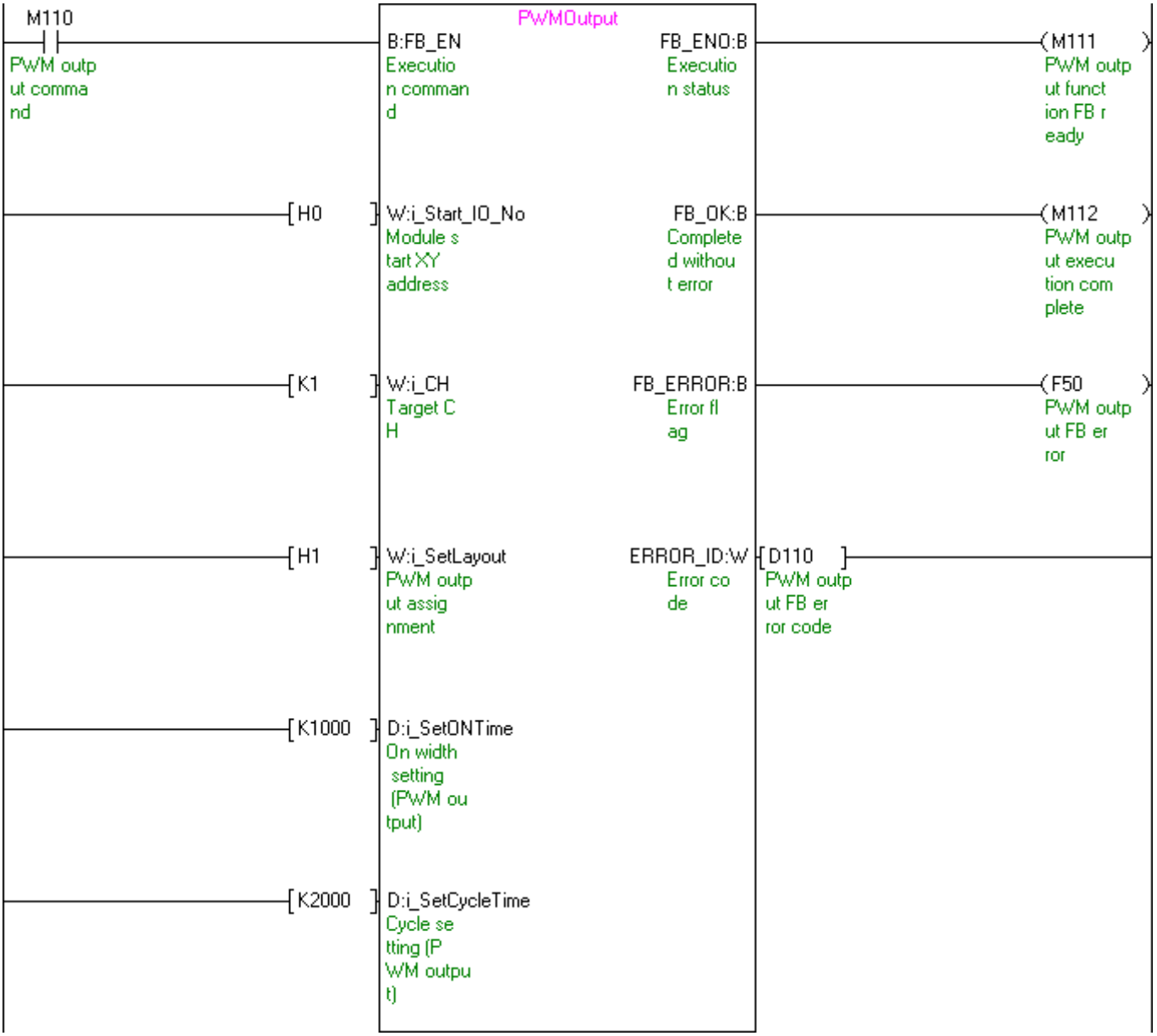
M+QD65PD2_RotationSpeedMeasure (Rotation speed measurement)



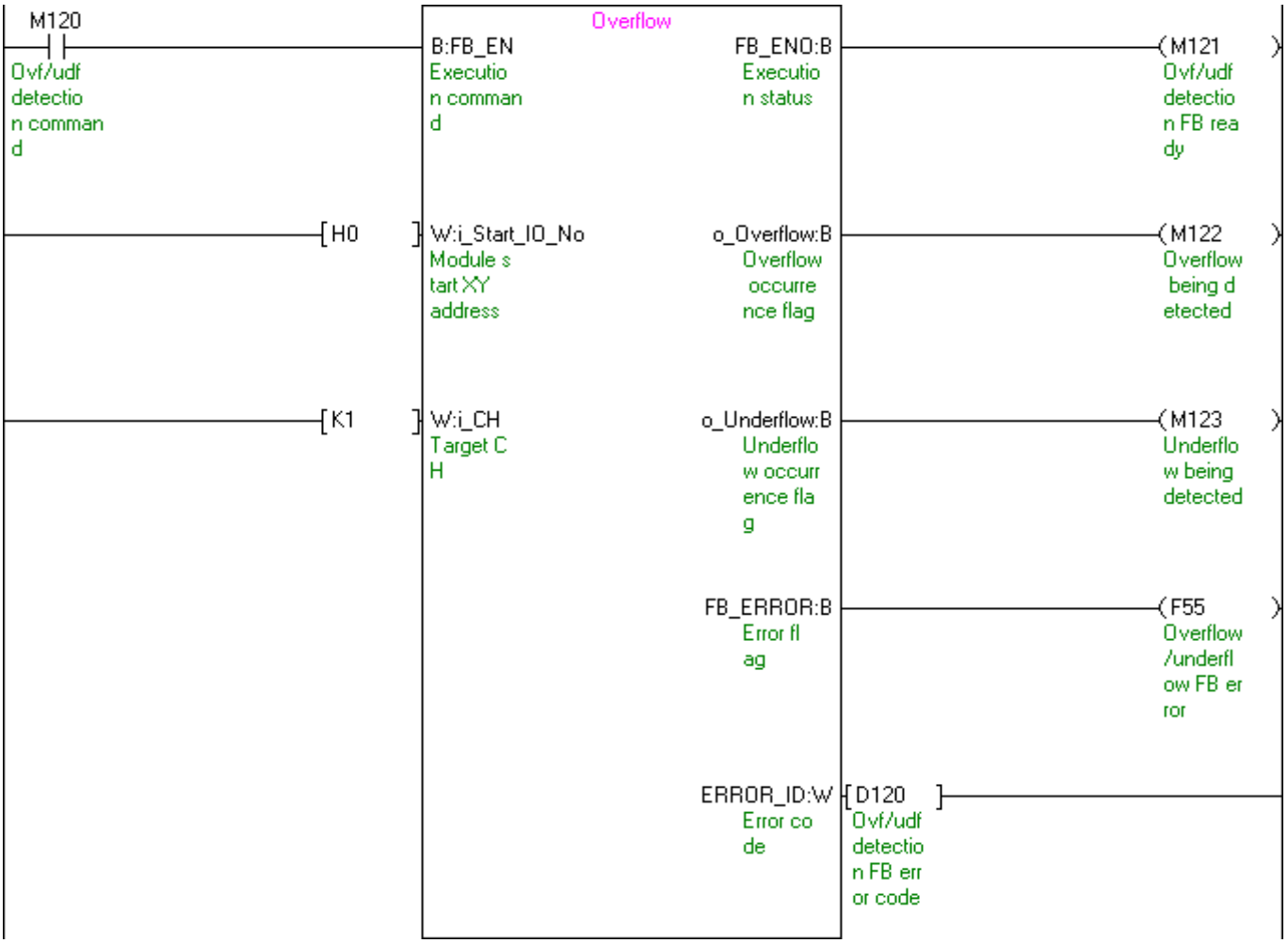
M+QD65PD2_PulseMeasure (Pulse measurement)



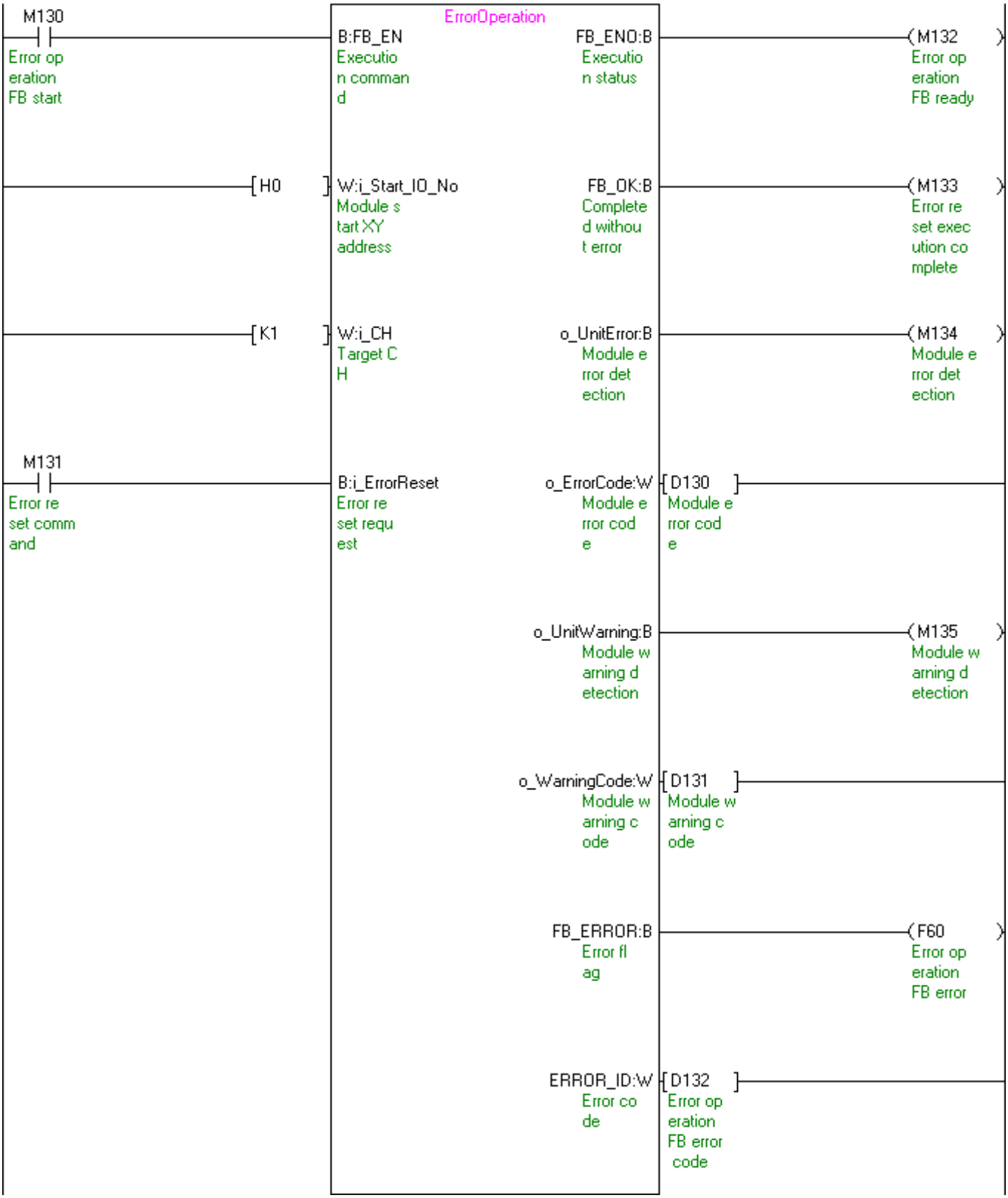
M+QD65PD2_PWMOutput (PWM output)



M+QD65PD2_OverflowDetection (Overflow/underflow detection)



M+QD65PD2_ErrorOperation (Error operation)



M+QD65PD2_DegreeToCountVal (Angle conversion)