

Mitsubishi Programmable Controller

MELSEC iQ-R
series

MELSEC iQ-R I/O Module Function Block Reference

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1 FUNCTION BLOCK (FB) LIST

This chapter lists the FBs for the MELSEC iQ-R series I/O module.

Name*1	Description
M+RY10R2_ReadOutputOnTimes	Reads the number of the relay ON times of the specified module and relay device number.
M+RY10R2_CompareRelayOnTimes	Reads the number of relay ON times, compares the value with the setting value, and turns on a device according to the comparison result.

*1 Note that this reference does not describe the FB version information which is displayed such as "_00A" at the end of FB name

2 I/O MODULE FB

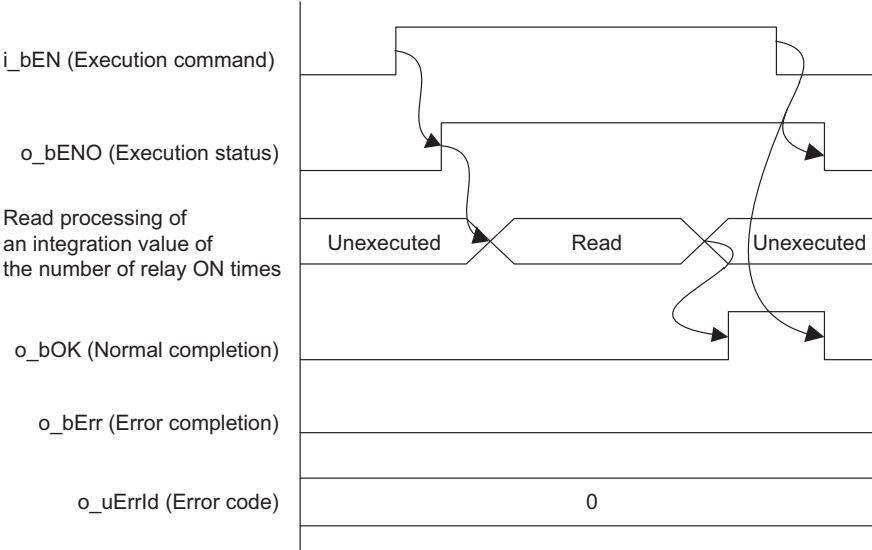
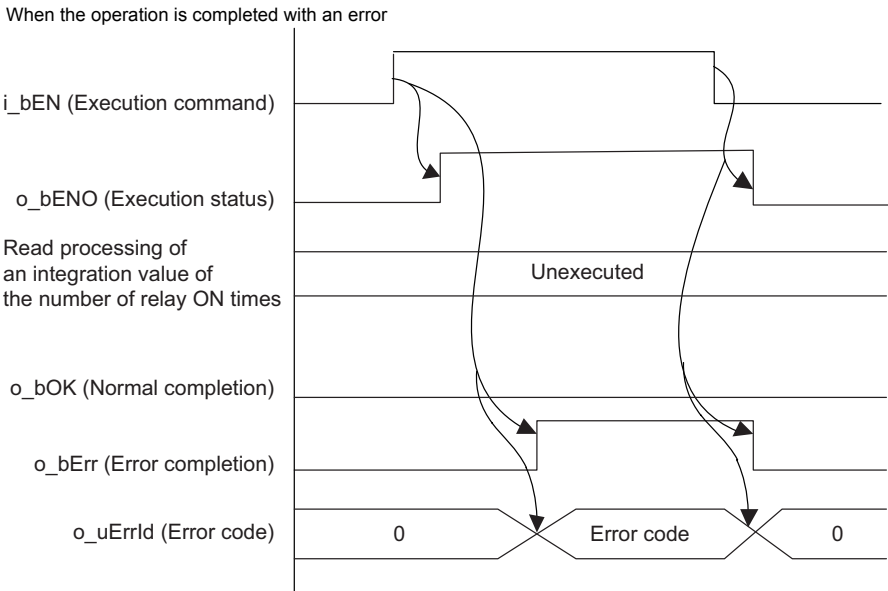
2.1 M+RY10R2_ReadOutputOnTimes

Name

M+RY10R2_ReadOutputOnTimes

FB details

Item	Description						
Overview	Reads the number of the relay ON times of the specified module and relay device number.						
Symbol							
Available device	<table border="1"> <tr> <td>Target module</td> <td>RY10R2</td> </tr> <tr> <td>CPU module</td> <td>MELSEC iQ-R series CPU modules</td> </tr> <tr> <td>Engineering tool</td> <td>GX Works3</td> </tr> </table>	Target module	RY10R2	CPU module	MELSEC iQ-R series CPU modules	Engineering tool	GX Works3
Target module	RY10R2						
CPU module	MELSEC iQ-R series CPU modules						
Engineering tool	GX Works3						
Language	Ladder diagram						
Number of basic steps	53 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.						
Processing	<ul style="list-style-type: none"> The integration value of the number of relay ON times specified with i_uRaNo (Target relay device number) of the module specified with i_stModule (Module label) is output to o_udOutputONTotat (Integration value of the number of relay ON times). The operation of this FB is one-shot, triggered by i_bEN (Execution command). If the FB has completed successfully, o_bOK (Normal completion) turns on. If the setting value of i_uRaNo (Target relay device number) is out of the setting range, o_bErr (Error completion) turns on and the processing of this FB is interrupted. In addition, the error code is stored in o_uErrId (Error code). For the error code, refer to the list of error codes. 						
FB compilation method	Macro type						
FB operation	Pulsed execution (single scan execution type)						

Item	Description
Timing chart of I/O signals	<p>When the operation is completed successfully</p>  <p>When the operation is completed with an error</p> 
Restrictions or precautions	<ul style="list-style-type: none"> • This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB cannot be used in an interrupt program. • Do not use this FB in programs that are executed only once, such as a subroutine program or FOR-NEXT loop, because i_bEN (Execution command) cannot be turned off and the normal operation cannot be acquired. Always use this FB in programs that can turn off i_bEN (Execution command). • When this FB is used twice or more, precaution must be taken to avoid duplication of the relay device number. • Every input must be provided with a value for proper FB operation.

Error code

Error code	Description	Action
101 (hexadecimal)	The set value of i_uRaNo is out of the range. The relay device number is not within the range of 0H to FH.	Try again after checking the setting.

Labels

■Input label

Name	Variable name	Data type	Range	Description
Execution command	i_bEN	Bit	On or off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structure	The setting range differs depending on the module label.	Specify the module label of the contact output module.
Target relay device number	i_uRaNo	Word [Unsigned]	0H to FH	Specify the relay device number to read the number of ON times. (For example, when output Y*0 is read, specify 0H.)

■Output label

Name	Variable name	Data type	Default value	Description
Execution status	o_bENO	Bit	Off	On: The execution command is on. Off: The execution command is off.
Integration value of No. of relay ON times	o_udOutputOnTotal	Double Word [Unsigned]	0	The integration value of the number of relay ON times of the specified target module and relay device number is read.
Normal completion	o_bOK	Bit	Off	When this label is on, it indicates that reading the number of relay ON times has been completed successfully.
Error completion	o_bErr	Bit	Off	When this label is on, it indicates that an error has occurred in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Stores the abnormal code generated in the FB.

2.2 M+RY10R2_CompareRelayOnTimes

Name

M+RY10R2_CompareRelayOnTimes

FB details

Item	Description						
Overview	Reads the number of the relay ON times of the specified module and relay device number, compares the value with the set value, and outputs the comparison result.						
Symbol							
Available device	<table border="1"> <tr> <td>Target module</td> <td>RY10R2</td> </tr> <tr> <td>CPU module</td> <td>MELSEC iQ-R series CPU modules</td> </tr> <tr> <td>Engineering tool</td> <td>GX Works3</td> </tr> </table>	Target module	RY10R2	CPU module	MELSEC iQ-R series CPU modules	Engineering tool	GX Works3
Target module	RY10R2						
CPU module	MELSEC iQ-R series CPU modules						
Engineering tool	GX Works3						
Language	Ladder diagram						
Number of basic steps	60 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.						
Processing	<ul style="list-style-type: none"> The integration value of the number of relay ON times specified with i_uRaNo (Target relay device number) of the module specified with i_stModule (Module label) is output to o_udOutputONTotal (Integration value of the number of relay ON times). By turning on i_bEN (Execution command), the integration value of the number of relay ON times and the numbers specified with i_udCompareCount are compared. When o_udOutputONTotal is greater than i_udCompareCount, o_bFbResult is turned on. The operation of this FB is one-shot, triggered by i_bEN (Execution command). If the FB has completed successfully, o_bOK (Normal completion) turns on. If the setting value of i_uRaNo (Target relay device number) is out of the setting range, o_bErr (Error completion) turns on and the processing of this FB is interrupted. In addition, the error code is stored in o_uErrId (Error code). For the error code, refer to the list of error codes. 						
FB compilation method	Macro type						
FB operation	Pulsed execution (single scan execution type)						

Item	Description
Timing chart of I/O signals	<p>When the operation is completed successfully</p> <p>When the operation is completed with an error</p>
Restrictions or precautions	<ul style="list-style-type: none"> • This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB cannot be used in an interrupt program. • Do not use this FB in programs that are executed only once, such as a subroutine program or FOR-NEXT loop, because i_bEN (Execution command) cannot be turned off and the normal operation cannot be acquired. Always use this FB in programs that can turn off i_bEN (Execution command). • When this FB is used twice or more, precaution must be taken to avoid duplication of the relay device number. • Every input must be provided with a value for proper FB operation.

Error code

Error code	Description	Action
101 (hexadecimal)	The set value of i_uRaNo is out of the range. The relay device number is not within the range of 0H to FH.	Try again after checking the setting.

Labels

■Input label

Name	Variable name	Data type	Range	Description
Execution command	i_bEN	Bit	On or off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structure	The setting range differs depending on the module label.	Specify the module label of the contact output module.
Target relay device number	i_uRaNo	Word [Unsigned]	0H to FH	Specify the relay device number to read the number of ON times. (For example, when output Y*0 is read, specify 0H.)
Number of comparisons	i_udCompareCount	Double Word [Unsigned]	0 to 4294967295 ^{*1}	Specify the number of times for comparing with the relay ON times.

*1 For the number of comparisons, refer to "Precautions when using the contact output module" in the following manual and specify a contact switching life suitable for the use environment including a switching current.

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■Output label

Name	Variable name	Data type	Default value	Description
Execution status	o_bENO	Bit	Off	On: The execution command is on. Off: The execution command is off.
Integration value of No. of relay ON times	o_udOutputOnTotal	Double Word [Unsigned]	0 ^{*1}	The integration value of the number of relay ON times of the specified target module and relay device number is read.
Normal completion	o_bOK	Bit	Off	When this label is on, it indicates that reading the number of relay ON times has been completed successfully.
Error completion	o_bErr	Bit	Off	When this label is on, it indicates that an error has occurred in the FB.
Error code	o_uErrId	Word [Unsigned]	0	Stores the abnormal code generated in the FB.
Comparison operation result	o_bFbResult	Bit	Off ^{*1}	This label turns on when the number of relay ON times is greater than the number of comparisons.

*1 o_udOutputOnTotal (Number of relay ON times) is the ring counter. Note that if an integration value exceeds 4294967295, the integration value returns to 0, and o_bFbResult (Comparison operation result) turns off from on.

REVISIONS

*The manual number is given on the bottom left of the back cover.

Revision date	*Manual number	Description
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