MITSUBISHI ELECTRIC

Mitsubishi Programmable Controller

MELSEC iQ-R series

MELSEC iQ-R Serial Communication Module Function Block Reference

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1 FUNCTION BLOCK (FB) LIST

This chapter lists the FBs for the MELSEC iQ-R series serial communication module.

Name[*1]	Description
M+RJ71C24_SendOndemand	Sends data using the on-demand function of SLMP (MC protocol).
M+RJ71C24_Output	Sends data for a specified data points.
M+RJ71C24_Input	Reads the received data.
M+RJ71C24_BidirectionalOutput	Sends data for a specified data points.
M+RJ71C24_BidirectionalInput	Reads the received data.
M+RJ71C24_ReadInstructionBusy	Reads the transmission status of the data sent/received using the dedicated instructions or FBs.
M+RJ71C24_SendUserFrame	Sends data using the nonprocedural protocol communication and the user frame according to the setting of the user frame specification area for sending data.
M+RJ71C24_PutUserFrame	Registers and deletes the user frame.
M+RJ71C24_GetUserFrame	Reads the user frame.
M+RJ71C24_ExeCommonProtocol	Executes the protocol registered with GX Works3.

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

MEMO

2 SERIAL COMMUNICATION MODULE FB

2.1 M+RJ71C24_SendOndemand

Name

M+RJ71C24_SendOndemand

FB details

Item	Description
Overview	Sends data using the on-demand function of SLMP (MC protocol).
Symbol	
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	46 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), data is sent using the on-demand function of SLMP (MC protocol).
FB compilation method	Macro type
FB operation	Pulse type (multiple scan execution type)
Timing chart of I/O signals	
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction GP.ONDEMAND. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

Symbol detail:

M+RJ71C24_SendOndemand

Input		Output	
Execution command	B : i_bEN	o_bENO : B	Execution status
Module label	DUT : i_stModule	o_bOK : B	Normal completion
Transmission channel	UW : i_uCh	o_bErr : B	Error completion
The number of transmission data	UW : i_uSendDataLength	o_uErrId : UW	Error code
Send data storage device	W : i_uSendData		

Timing chart:

[In normal completion]

i_bEN [Execution command]
o_bENO [Execution status]
o_bOK [Normal completion]
o_bErr [Error completion]
o_uErrId [Error code] — 0H

[In error completion]
(also the same for a module error)

i_bEN [Execution command]
o_bENO [Execution status]
o_bOK [Normal completion]
o_bErr [Error completion]
o_uErrId [Error code] — 0H / Error code / 0H

Error code

The error code is the same as the one that generates when the G(P).ONDEMAND instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

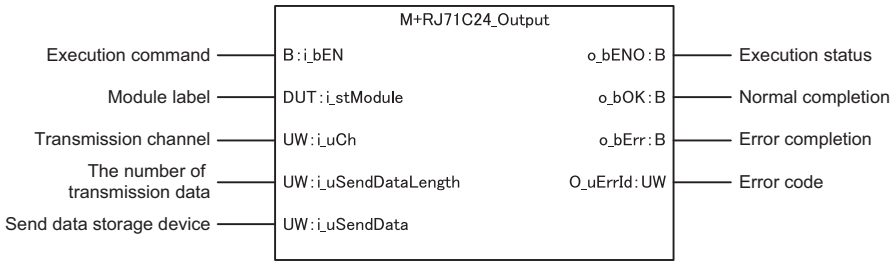| Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).
Send channel	i_uCh	Word [Unsigned]/ Bit String [16-bit]	1, 2	0	Set the channel to which the data is sent. • 1: Channel 1 (CH1 side) • 2: Channel 2 (CH2 side)
Number of send data points	i_uSendDataLength	Word [Unsigned]/ Bit String [16-bit]	1 or greater	0	Set the number of send data points in the units (word/byte) specified to the following area of the buffer memory. • Channel 1 (CH1 side): 150 (96H) • Channel 2 (CH2 side): 310 (136H)
Send data storage device	i_uSendData	Word [Unsigned]/ Bit String [16-bit]	—	0	Set the start address of the device where the send data is stored.

■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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/Bit String [16-bit]	0	Stores the error code that has occurred in the FB.

2.2 M+RJ71C24_Output

Name

M+RJ71C24_Output

FB details

Item	Description
Overview	Sends the specified data using the nonprocedural protocol.
Symbol	
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	46 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), data is sent in any message format using the nonprocedural protocol.
FB compilation method	Macro type
FB operation	Pulse execution (multiple scan execution type)
Timing chart of I/O signals	The operation of the I/O signals is the same as the one for the following FB. ☞ Page 4 M+RJ71C24_SendOndemand
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction GP.OUTPUT. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

Error code

The error code is the same as the one that generates when the G(P).OUTPUT instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).
Send channel	i_uCh	Word [Unsigned]/ Bit String [16-bit]]	1, 2	0	Set the channel to which the data is sent. • 1: Channel 1 (CH1 side) • 2: Channel 2 (CH2 side)
Number of send data points	i_uSendDataLength	Word [Unsigned]/ Bit String [16-bit]	1 or greater	0	Set the number of send data points in the units (word/byte) specified to the following area of the buffer memory. • Channel 1 (CH1 side): 150 (96H) • Channel 2 (CH2 side): 310 (136H)
Send data storage device	i_uSendData	Word [Unsigned]/ Bit String [16-bit]	—	0	Set the start address of the device where the send data is stored.

■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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/Bit String [16-bit]	0	Stores the error code that has occurred in the FB.

2.3   M+RJ71C24_Input

Name

M+RJ71C24_Input

FB details

Item	Description
Overview	Reads the data received using the nonprocedural protocol.
Symbol	 Execution command ———— B:i_bEN ... o_bENO:B ———— Execution status Module label ———— DUT:i_stModule ... o_bOK:B ———— Normal completion Receive channel ———— UW:i_uCh ... o_bErr:B ———— Error completion Allowable number of receive data ———— UW:i_uMaxRecvDataLength ... o_uErrId:UW ———— Error code ... o_uRecvDataLength:UW ———— The number of receive data ... o_uRecvData:UW ———— Receive data storage device (M+RJ71C24_Input)
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	46 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), data is received in any message format using the nonprocedural protocol.
FB compilation method	Macro type
FB operation	Pulse execution (multiple scan execution type)
Timing chart of I/O signals	The operation of the I/O signals is the same as the one for the following FB. ☞Page 4 M+RJ71C24_SendOndemand
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction G.INPUT. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

Error code

The error code is the same as the one that generates when the G.INPUT instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).
Receive channel	i_uCh	Word [Unsigned]/ Bit String [16-bit]	1, 2	0	Set the channel that receives the data. • 1: Channel 1 (CH1 side) • 2: Channel 2 (CH2 side)
Allowable number of receive data points	i_uMaxRecvDataLength	Word [Unsigned]/ Bit String [16-bit]	0 or greater	0	Set the allowable number of words of the receive data that can be stored in the receive data storage device.

■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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/ Bit String [16-bit]	0	Stores the generated error code.
Number of receive data points	o_uRecvDataLength	Word [Unsigned]/ Bit String [16-bit]	0	Set the start address of the device to store the number of receive data points. • Channel 1 (CH1 side): 150 (96H) • Channel 2 (CH2 side): 310 (136H)
Receive data storage device	o_uRecvData	Word [Unsigned]/ Bit String [16-bit]	0	Set the start address of the device to store the receive data.

2.4   M+RJ71C24_BidirectionalOutput

Name

M+RJ71C24_BidirectionalOutput

FB details

Item	Description
Overview	Sends the specified data using the bidirectional protocol.
Symbol	

Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3

Language	Ladder diagram
Number of basic steps	45 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), data is sent using the bidirectional protocol.
FB compilation method	Macro type
FB operation	Pulse execution (multiple scan execution type)
Timing chart of I/O signals	The operation of the I/O signals is the same as the one for the following FB. ☞ Page 4 M+RJ71C24_SendOndemand
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction GP.BIDOUT. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

Error code

The error code is the same as the one that generates when the G(P).BIDOUT instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

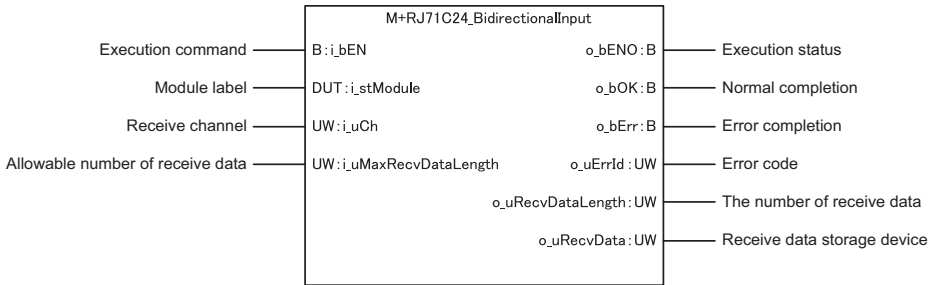| Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).
Send channel	i_uCh	Word [Unsigned]/ Bit String [16-bit]	1, 2	0	Set the channel to which the data is sent. • 1: Channel 1 (CH1 side) • 2: Channel 2 (CH2 side)
Number of send data points	i_uSendDataLength	Word [Unsigned]/ Bit String [16-bit]	1 or greater	0	Set the number of send data points in the units (word/byte) specified to the following area of the buffer memory. • Channel 1 (CH1 side): 150 (96H) • Channel 2 (CH2 side): 310 (136H)
Send data storage device	i_uSendData	Word [Unsigned]/ Bit String [16-bit]	—	0	Set the start address of the device where the send data is stored.

■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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/ Bit String [16-bit]	0	Stores the generated error code.

2.5 M+RJ71C24_BidirectionalInput

Name

M+RJ71C24_BidirectionalInput

FB details

Item	Description
Overview	Reads the data received using the bidirectional protocol.
Symbol	
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	46 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), data is received in any message format using the bidirectional protocol.
FB compilation method	Macro type
FB operation	Pulse execution (multiple scan execution type)
Timing chart of I/O signals	The operation of the I/O signals is the same as the one for the following FB. ☞ Page 4 M+RJ71C24_SendOndemand
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction G.BIDIN. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

In the symbol:

- Execution command — B:i_bEN
- Module label — DUT:i_stModule
- Receive channel — UW:i_uCh
- Allowable number of receive data — UW:i_uMaxRecvDataLength
- o_bENO:B — Execution status
- o_bOK:B — Normal completion
- o_bErr:B — Error completion
- o_uErrId:UW — Error code
- o_uRecvDataLength:UW — The number of receive data
- o_uRecvData:UW — Receive data storage device

M+RJ71C24_BidirectionalInput

Error code

The error code is the same as the one that generates when the G(P).BIDIN instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).
Receive channel	i_uCh	Word [Unsigned]/ Bit String [16-bit]	1, 2	0	Set the channel that receives the data. • 1: Channel 1 (CH1 side) • 2: Channel 2 (CH2 side)
Allowable number of receive data points	i_uMaxRecvDataLength	Word [Unsigned]/ Bit String [16-bit]	0 or greater	0	Set the allowable number of words of the receive data that can be stored in the receive data storage device.

■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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/ Bit String [16-bit]	0	Stores the generated error code.
Number of receive data points	o_uRecvDataLength	Word [Unsigned]/ Bit String [16-bit]	0	Set the start address of the device to store the number of receive data points. • Channel 1 (CH1 side): 150 (96H) • Channel 2 (CH2 side): 310 (136H)
Receive data storage device	o_uRecvData	Word [Unsigned]/ Bit String [16-bit]	0	Set the start address of the device to store the receive data.

2.6   M+RJ71C24_ReadInstructionBusy

Name

M+RJ71C24_ReadInstructionBusy

FB details

Item	Description
Overview	Reads the transmission status of the data sent/received using the dedicated instructions or FBs.
Symbol	
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	10 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), the execution status of the FB or the dedicated instruction for the target module is read.
FB compilation method	Macro type
FB operation	• Pulse execution (multiple scan execution type) • Always executed
Timing chart of I/O signals	
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction GP.SPBUSY.

Error code

The error code is the same as the one that generates when the G(P).SPBUSY instruction is used. Refer to MELSEC iQ-R
Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

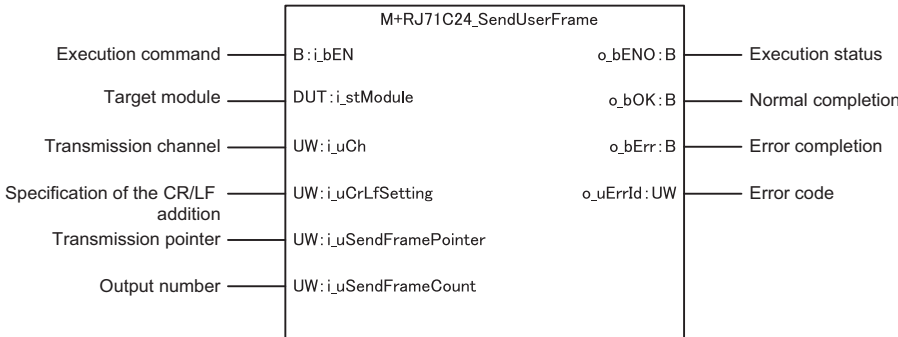| Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).

■Output label

Name	Variable name	Data type	Default value	Description
Transmission status storage device	o_uCommunication Status	Word [Unsigned]/Bit String [16-bit]	0	When the processing using each instruction starts, 1 is stored in the corresponding bit. When the processing is completed, 0 is stored. The following shows the timing when the processing of each instruction is completed. • FB: The execution status is turned on and off. • Dedicated instruction: The completed flag is turned on and off.

2.7   M+RJ71C24_SendUserFrame

Name

M+RJ71C24_SendUserFrame

FB details

Item	Description
Overview	Sends data using the nonprocedural protocol communication and the user frame according to the setting of the user frame specification area for sending data.
Symbol	
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	47 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), data is sent using the nonprocedural protocol and the user frame according to the setting of the user frame specification area for sending data.
FB compilation method	Macro type
FB operation	Pulse execution (multiple scan execution type)
Timing chart of I/O signals	The operation of the I/O signals is the same as the one for the following FB. ☞ Page 4 M+RJ71C24_SendOndemand
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction GP.PRR. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

Error code

The error code is the same as the one that generates when the G(P).PRR instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).
Send channel	i_uCh	Word [Unsigned]/ Bit String [16-bit]	1, 2	0	Set the channel to which the data is sent. • 1: Channel 1 (CH1 side) • 2: Channel 2 (CH2 side)
Additional specification of CR/LF	i_uCrLfSetting	Word [Unsigned]/ Bit String [16-bit]	0 to 1	0	Set whether or not to add CR/LF to the send data. • 0: CR/LF is not added. • 1: CR/LF is added.
Send pointer	i_uSendFramePointer	Word [Unsigned]/ Bit String [16-bit]	1 to 100	0	Set the position in the user frame specification area from where the frame number data is sent.
Number of outputs	i_uSendFrameCount	Word [Unsigned]/ Bit String [16-bit]	1 to 100	0	Set the number of user frames to send.

■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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/ Bit String [16-bit]	0	Stores the generated error code.

2.8   M+RJ71C24_PutUserFrame

Name

M+RJ71C24_PutUserFrame

FB details

Item	Description
Overview	Registers and deletes user frames according to the setting value of the request type.
Symbol	
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	50 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), the user frame is registered.
FB compilation method	Macro type
FB operation	Pulse execution (multiple scan execution type)
Timing chart of I/O signals	The operation of the I/O signals is the same as the one for the following FB. ☞ Page 4 M+RJ71C24_SendOndemand
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction GP.PUTE. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

The Symbol diagram shows:

Input		Output
Execution command	B : i_bEN	o_bENO : B — Execution status
Module label	DUT : i_stModule	o_bOK : B — Normal completion
Request type	UW : i_uRequestType	o_bErr : B — Error completion
Registration frame number	UW : i_uFrameNo	o_uErrId : UW — Error code
Number of register bytes	UW : i_uFrameDataLength	
Registration frame storage device	UW : i_uFrameData	

Title: M+RJ71C24_PutUserFrame

Error code

The error code is the same as the one that generates when the G(P).PUTE instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	ON	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).

• Request type = 1: When the user frame is registered

Name	Variable name	Data type	Range	Default value	Description
Request type	i_uRequestType	Word [Unsigned]/ Bit String [16-bit]	1	0	When the initial setting is performed using this FB, set Request type = 1.
Registration frame No.	i_uFrameINo	Word [Unsigned]/ Bit String [16-bit]	1000 to 1199	0	Set the user frame number to be registered.
Number of registration bytes	i_uFrameDataLength	Word [Unsigned]/ Bit String [16-bit]	1 to 80	0	Set the number of bytes for the user frame to be registered.
Registration frame storage device	i_uFrameData	Word [Unsigned]/ Bit String [16-bit]	Shown on the right	0	Set the data to be registered. When it is specified using the label, use "ARRAY" for the data type.

• Request type = 3: When the user frame is deleted

Name	Variable name	Data type	Range	Default value	Description
Request type	i_uRequestType	Word [Unsigned]/ Bit String [16-bit]	3	0	When the initial setting is performed using this FB, set Request type = 3.
Registration frame No.	i_uFrameINo	Word [Unsigned]/ Bit String [16-bit]	1000 to 1199	0	Set the user frame number to be deleted.
Number of registration bytes	i_uFrameDataLength	Word [Unsigned]/ Bit String [16-bit]	1 to 80	0	Specify 1 to 80 as a dummy when the frame is deleted.
Registration frame storage device	i_uFrameData	Word [Unsigned]/ Bit String [16-bit]	Refer to the right.	0	Specify the same value at the registration. When it is specified using the label, use "ARRAY" for the data type.
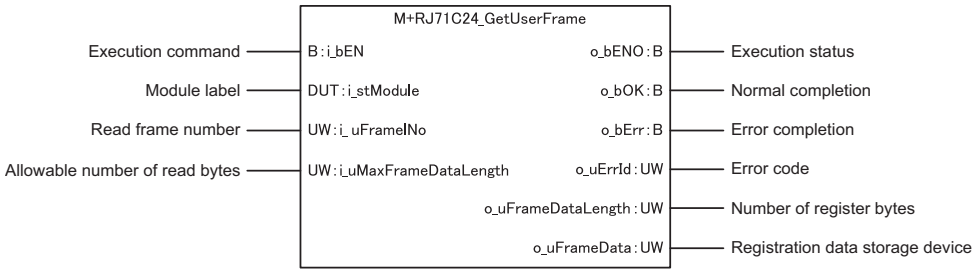
■Output label

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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/ Bit String [16-bit]	0	Stores the error code that has occurred in the FB.

2.9   M+RJ71C24_GetUserFrame

Name

M+RJ71C24_GetUserFrame

FB details

Item	Description
Overview	Reads the user frame.
Symbol	
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	46 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), the user frame is read.
FB compilation method	Macro type
FB operation	Pulse execution (multiple scan execution type)
Timing chart of I/O signals	The operation of the I/O signals is the same as the one for the following FB. ☞ Page 4 M+RJ71C24_SendOndemand
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction GP.GETE. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

Error code

The error code is the same as the one that generates when the G(P).GETE instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

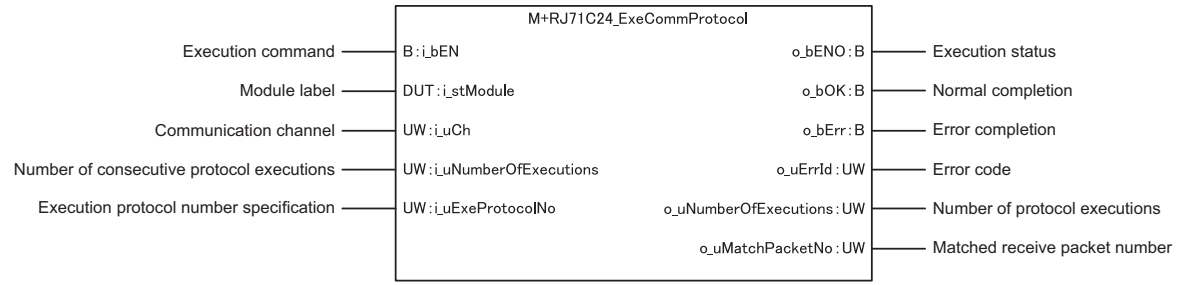| Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).
Read frame No.	i_FrameINo	Word [Unsigned]/ Bit String [16-bit]	1000 to 1199	0	Set the user frame number to be read.
Read-allowable number of bytes	i_MaxFrameDataLength	Word [Unsigned]/ Bit String [16-bit]	1 to 80	1	Set the number of bytes of the read registration data to be stored in the registration data storage device (o_uFrameData).

■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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/ Bit String [16-bit]	0	Stores the error code that has occurred in the FB.
Number of registration bytes	o_uFrameDataLength	Word [Unsigned]/ Bit String [16-bit]	0	Set the start address of the device to store the number of bytes of the read registration data.
Registration data storage device	o_uFrameData	Word [Unsigned]/ Bit String [16-bit]	0	Set the start address of the device to store the read registration data.

2.10 M+RJ71C24_ExeCommonProtocol

Name

M+RJ71C24_ExeCommonProtocol

FB details

Item	Description
Overview	Executes the protocol registered with GX Works3.
Symbol	 M+RJ71C24_ExeCommProtocol Execution command — B : i_bEN o_bENO : B — Execution status Module label — DUT : i_stModule o_bOK : B — Normal completion Communication channel — UW : i_uCh o_bErr : B — Error completion Number of consecutive protocol executions — UW : i_uNumberOfExecutions o_uErrId : UW — Error code Execution protocol number specification — UW : i_uExeProtocolNo o_uNumberOfExecutions : UW — Number of protocol executions o_uMatchPacketNo : UW — Matched receive packet number
Available device	Target module	R series C24
	CPU module	MELSEC iQ-R series CPU modules
	Engineering tool	GX Works3
Language	Ladder diagram
Number of basic steps	58 steps The number of steps of the FB in a program depends on the CPU model used and input and output definition.
Processing	By turning on i_bEN (Execution command), the protocol written to the flash ROM using the predefined protocol support function and executing the special protocol.
FB compilation method	Macro type
FB operation	Pulse execution (multiple scan execution type)
Timing chart of I/O signals	The operation of the I/O signals is the same as the one for the following FB. ☞ Page 4 M+RJ71C24_SendOndemand
Restrictions or precautions	• This FB does not include the error recovery processing. Program the error recovery processing separately in accordance with the required system operation. • This FB uses the dedicated instruction GP.CPRTCL. • Turn off i_bEN (Execution command) after o_bOK (Normal completion) or o_bErr (Error completion) is turned on. By turning off i_bEN (Execution command), o_bOK (Normal completion) and o_bErr (Error completion) are turned off and o_uErrId (Error code) is cleared to 0.

Error code

The error code is the same as the one that generates when the G(P).CPRTCL instruction is used. Refer to MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks).

Labels

■Input label

Name	Variable name	Data type	Range	Default value	Description
Execution command	i_bEN	Bit	—	Off	On: The FB is activated. Off: The FB is not activated.
Module label	i_stModule	Structures	—	—	Specify the module to execute this FB. Specify the module label of relevant modules (example: C24_1).
Communication channel	i_uCh	Word [Unsigned]/Bit String [16-bit]	1, 2	0	Set the channel to communicate with the external device. • 1: Channel 1 (CH1 side) • 2: Channel 2 (CH2 side)
Number of continuous protocol executions	i_uNumberOfExecutions	Word [Unsigned]/Bit String [16-bit]	1 to 8	0	Set the number of continuous executions of the protocol.
Execution protocol number specification	i_uExeProtocolNo	Word [Unsigned]/Bit String [16-bit]	1 to 128, 201 to 207	0	Set the protocol number or the special protocol number to be executed. Protocols are executed in the specified order of the execution protocol numbers. 1st word | Execution protocol number specification 1 | ⋮ 8th word | Execution protocol number specification 8 | When it is specified using the label, use "ARRAY" for the data type.

■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.
Normal completion	o_bOK	Bit	Off	This label turns on for one scan when the operation is completed normally.
Error completion	o_bErr	Bit	Off	This label turns on for one scan when the operation is completed with an error.
Error code	o_uErrId	Word [Unsigned]/Bit String [16-bit]	0	Stores the error code that has occurred in the FB.
Number of protocol executions	o_uNumberOfExecutions	Word [Unsigned]/Bit String [16-bit]	0	The number of protocol executions is stored. The protocol in which an error has occurred is included in the number of executions. If the setting data and the setting details of the control data are incorrect, 0 is stored.
Verification match receive packet No.	o_uMatchPacketNo	Word [Unsigned]/Bit String [16-bit]	0	1st word | Matched receive packet No.1 | ⋮ 8th word | Matched receive packet No.8 | A value is stored in the area corresponding to the execution protocol number. When the communication type of the executed protocol is "Send only" or "Send and receive", the receive packet number that matches with the executed protocol, is stored. In the following cases, 0 is stored. • When the communication type is "Receive only" • When an error occurs in the executed protocol • When a special protocol is used When it is specified using the label, use "ARRAY" for the data type.

REVISIONS

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

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Japanese manual number: BCN-P5999-0370-B

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