MELSEC-Q/L FILE OPERATION FB LIBRARY REFERENCE MANUAL

Applicable modules:
Q Series:High Performance model, Universal model
L Series:LCPU
*Not applicable for QCPU (A mode)

<CONTENTS>

Reference Manual Revision History

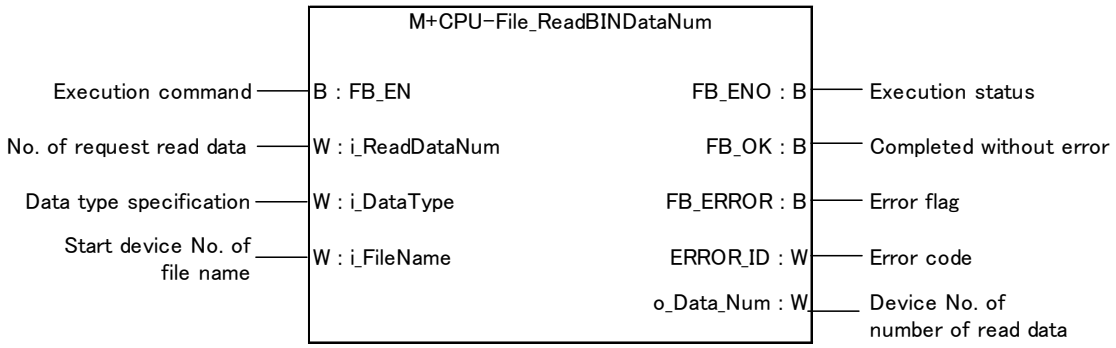
Reference Manual Number	Date	Description
FBM-M051-A	2011/03/22	First edition
FBM-M051-B	2013/04/12	For the following FB, the error code "11" was added and "Number of steps (maximum value)", "Function description", and "Timing chart" were corrected. 1) M+CPU-File_ReadBINDataNum 2) M+CPU-File_ReadCSVDataNum

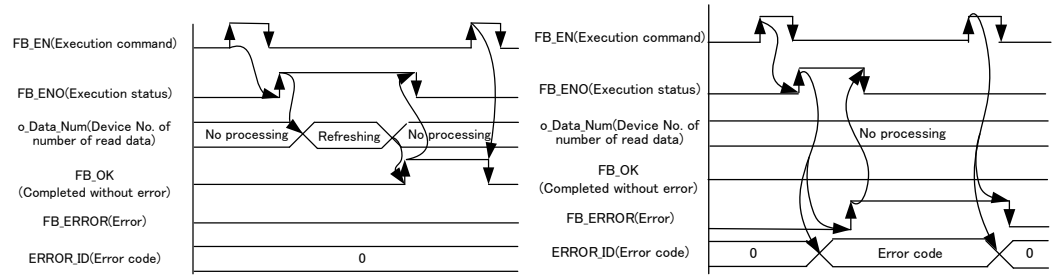
1.M+CPU-File_ReadBINDataNum (No. of data read from binary file)

FB Name

M+CPU-File_ReadBINDataNum

Function Overview

Item	Description
Function overview	Reads the number of data from the binary format file.
Symbol	
Applicable hardware and software	Hardware details Q series: High performance model; Universal model L series: LCPU *Not applicable for QCPU (A mode) Compatible software: GX Works 2 Version 1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 241* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).

Item	Description
Function description	1) By turning ON FB_EN (Execution command), the number of data is read from the binary data file. 2) Only binary format files in the ATA card can be read. 3) 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. 4) Even if FB_EN (Execution command) is turned OFF before the FB operation is completed, the processing continues until the reading the binary format file is completed or except when an error occurs.
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.
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to Appendix - Application examples.
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manuals	MELSEC-Q/L Programming Manual (Common Instructions)

Error codes

Error code list

Error code	Description
10	The number of read data exceeds the range. Set a correct number, and turn OFF FB_EN and then ON again.
11	Timeout of the read-out processing of the number of data occurred because accesses to the ATA card/SD memory card are frequently made in addition to this FB. Please reduce the frequency of the access processing to the ATA card/SD memory card.
Other than above	For details on the error codes, refer to “Appendix 1 Error Code Lists” in QCPU User's Manual(Hardware Design, Maintenance and Inspection)/MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection).

Labels

■Input labels

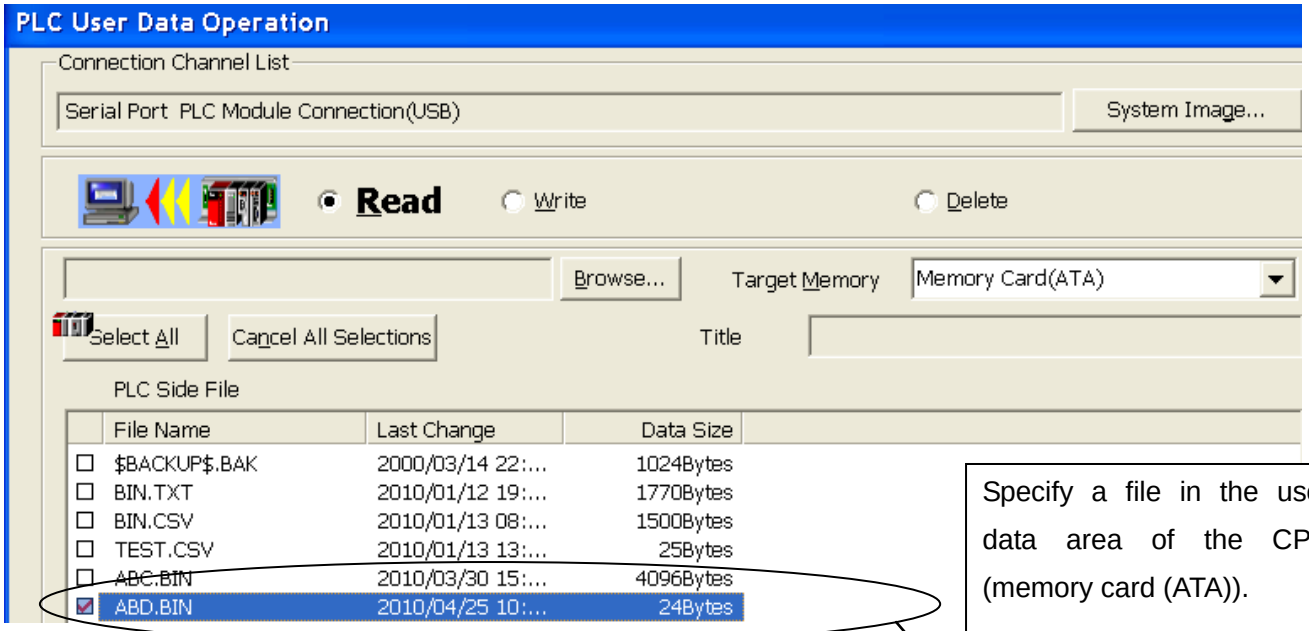
Name	Label name	Data type	Setting range	Description
Execution command	FB_EN	B	ON, OFF	ON: The FB is activated. OFF: The FB is not activated.
No. of request read data (word units)	i_ReadDataNum	W	1~480 1~2048 (For universal model and LCPU)	Specify the number of data to request reading. Directly specify the number of data to be read, or specify the device that stores the number of data to be read.
Data type specification	i_DataType	W	0: Word 1: Byte	Specify the data type of the number of data to be read. Directly specify the data type number, or specify the device that stores the data type number.
Start device No. of file name	i_FileName	W	Valid device range	Specify the device that stores the file name of the data to be read. A file name to be read from this device must be set in advance (BIN file can only be read).

■Output labels

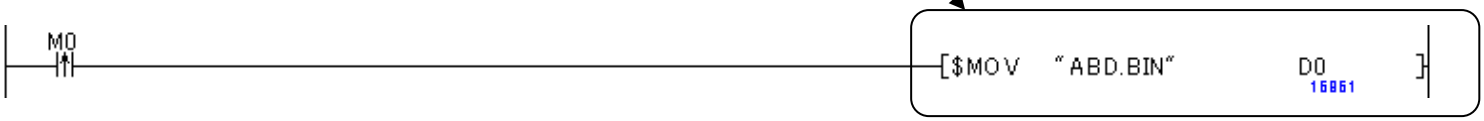
Name	Label name	Data type	Initial value	Description
Execution status	FB_ENO	B	OFF	ON: The FB is being executed. OFF: The FB is not executed.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the processing is completed.
Error flag	FB_ERROR	B	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	W	0	FB error code output.
Device No. of number of read data	o_Data_Num	W	0	Specify the number of device that stores the number of data that was read.

Processing description

The number of data is read from the binary format file under the user data area of the CPU (memory card (ATA)).



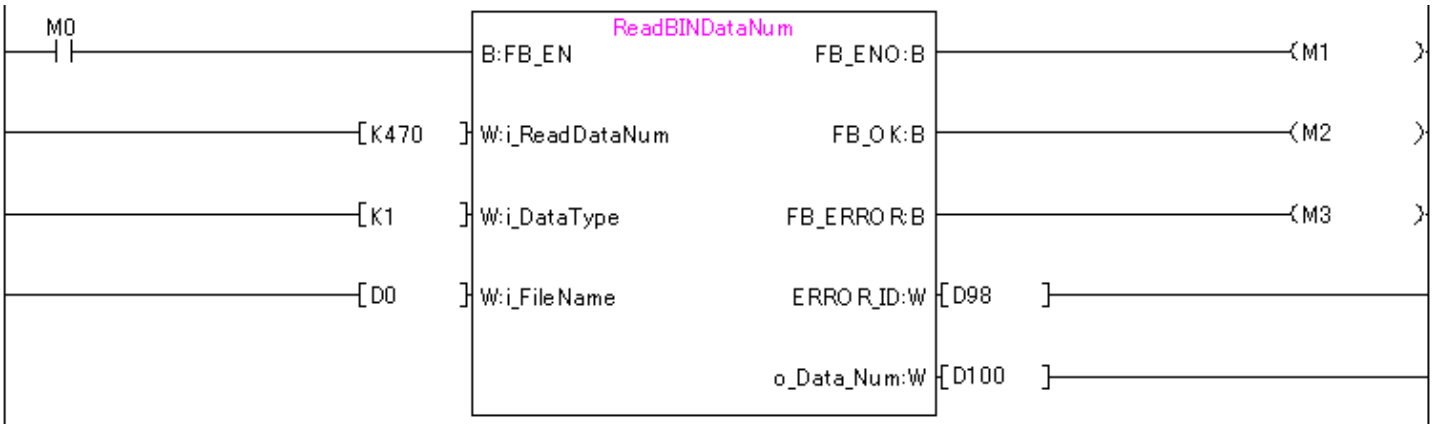
Specify a file in the user data area of the CPU (memory card (ATA)).



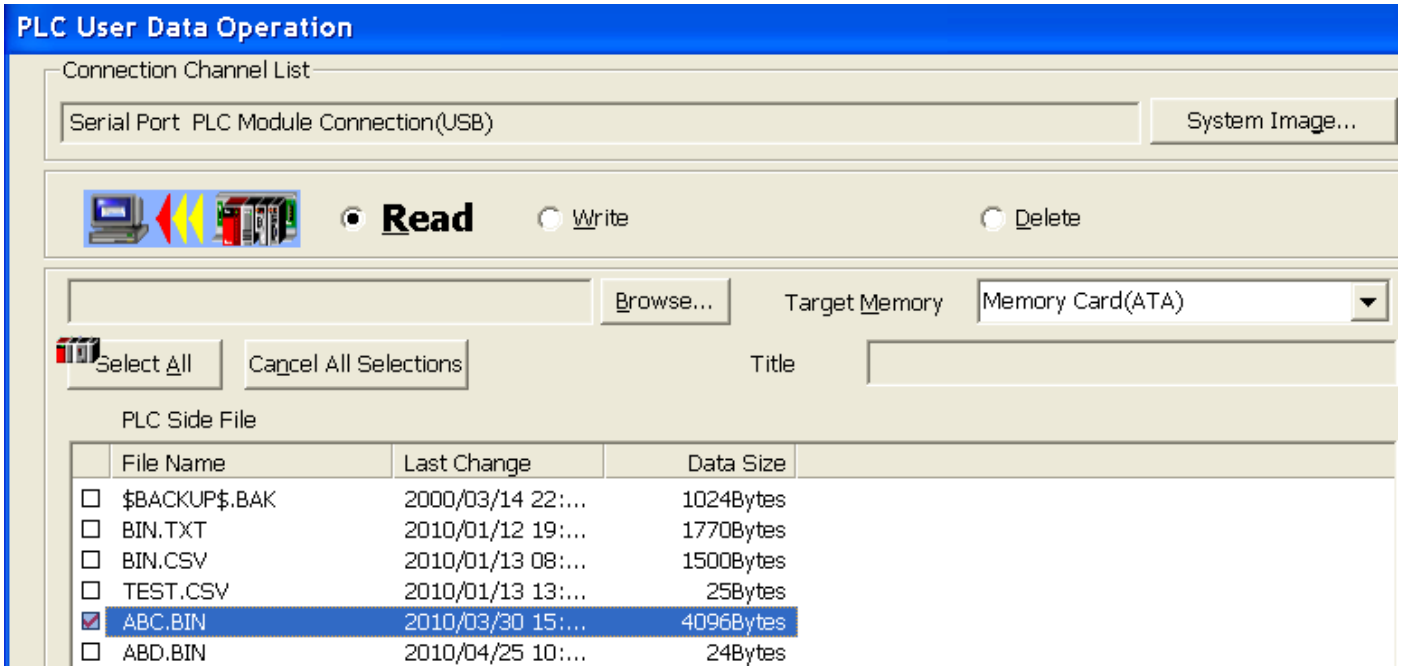
Specify the file name to be read for D0.

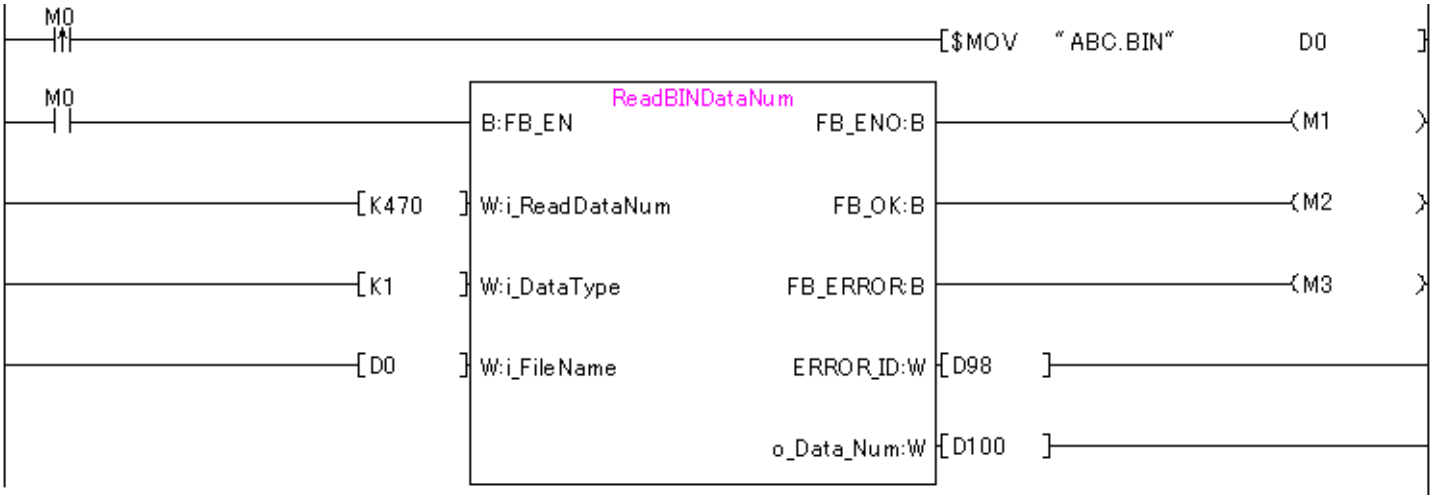
D0	“AB”
D1	“D.”
D2	“BI”
D3	“N_{null}”

When the FB is executed with the following settings, 256 is stored in D100 which stores the execution result.
If the data type specification is K0 (word), 128 is stored in D100.



If the size of the specified file is larger than the number of request read data (word units) when the data type specification is K0 (word), the same value as the number of request read data (word units) will be set. When the data type specification is K1 (byte), the value will be the number of request read data (word units) × 2.





When the data type specification is K0 (word), 470 is stored in D100.

When the data type specification is K1 (byte), 940 is stored in D100.

Version Upgrade History

Version	Date	Description
1.00A	2011/03/22	First edition
1.01B	2013/04/12	This FB has been improved so that timeout of the read-out processing of the number of data can be detected.

Note

This chapter includes information related to the M+CPU-File_ReadBINDataNum function block.

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

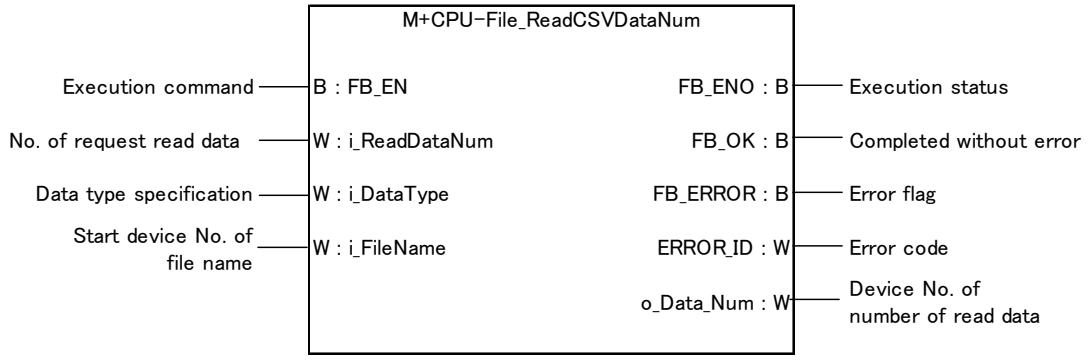
Before using any Mitsubishi products, please read all the relevant manuals.

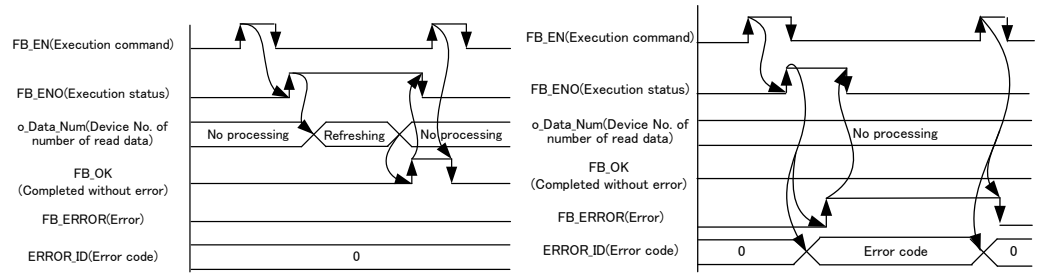
2.M+CPU-File_ReadCSVDataNum (No. of data read from CSV file)

FB Name

M+CPU-File_ReadCSVDataNum

Function Overview

Item	Description
Function overview	Reads the number of data from the CSV format file (extension: .CSV).
Symbol	
Applicable hardware and software	Hardware details Q series: High performance model; Universal model L series: LCPU *Not applicable for QCPU (A mode) Compatible software: GX Works 2 Version 1.31H or later
Programming language	Ladder
Number of steps (maximum value)	For universal model CPU: 246* *The value is the number of steps in the label program, and is therefore stated as a reference value. For details, refer to the GX Works2 Version1 Operation Manual (Simple Project).

Item	Description
Function description	1) By turning ON FB_EN (Execution command), the number of data is read from the data file (extension: .CSV). The CSV format file must be comma-delimited. 2) Only CSV format files in the ATA card can be read. 3) 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). 4) Even if FB_EN (Execution command) is turned OFF before the FB operation is completed, the processing continues until the reading the CSV format file is completed or except when an error occurs.
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) When two or more of these FBs are used, they cannot be executed simultaneously.
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to Appendix - Application examples.
Timing chart	•Operation of I/O signals [When operation completes without error] [When an error occurs] 
Relevant manuals	MELSEC-Q/L Programming Manual (Common Instructions)

Error codes

Error code list

Error code	Description
10	The number of read data exceeds the range. Set the correct number, and turn OFF FB_EN and then ON again.
11	Timeout of the read-out processing of the number of data occurred because accesses to the ATA card/SD memory card are frequently made in addition to this FB. Please reduce the frequency of the access processing to the ATA card/SD memory card.
Other than above	For details on the error codes, refer to “Appendix 1 Error Code Lists” in QCPU User's Manual(Hardware Design, Maintenance and Inspection)/MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection).

Labels

■Input labels

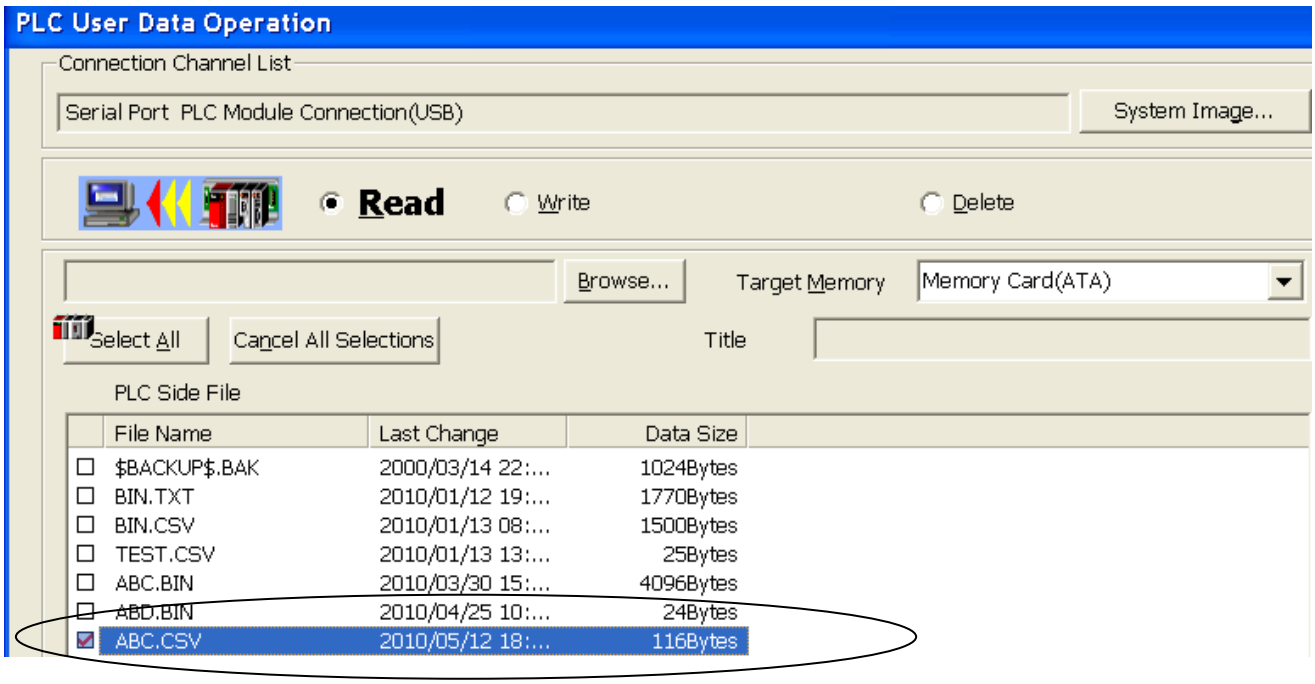
Name	Label name	Data type	Setting range	Description
Execution command	FB_EN	B	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
No. of request read data (word units)	i_ReadDataNum	W	1~480 1~2048 (For universal model and LCPU)	Specify the number of data to request reading. Directly specify the number of data to be read, or specify the device that stores the number of data to be read.
Data type specification	i_DataType	W	0: Word 1: Byte	Specify the data type of the number of data to be read. Directly specify the data type number, or specify the device that stores the data type number.
Start device No. of file name	i_FileName	W	Valid device range	Specify the device that stores the file name of the data to be read. A file name to be read from this device must be set in advance (CSV file can only be read).

■Output labels

Name	Label name	Data type	Initial value	Description
Execution status	FB_ENO	B	OFF	ON: The FB is being executed. OFF: The FB is not executed.
Completed without error	FB_OK	B	OFF	When ON, it indicates that the processing is completed.
Error flag	FB_ERROR	B	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	W	0	FB error code output.
Device No. of number of read data	o_Data_Num	W	0	Specify the number of device that stores the number of data that was read.

Processing description

The number of data is read from the CSV format file under the user data area of the CPU (memory card (ATA)).



Specify the file name to be read for D30.

D30	“AB”
D31	“C.”
D32	“CS”
D33	“V_{null}”

ABC.CSV is created as a comma-delimited CSV file in Excel as shown below.

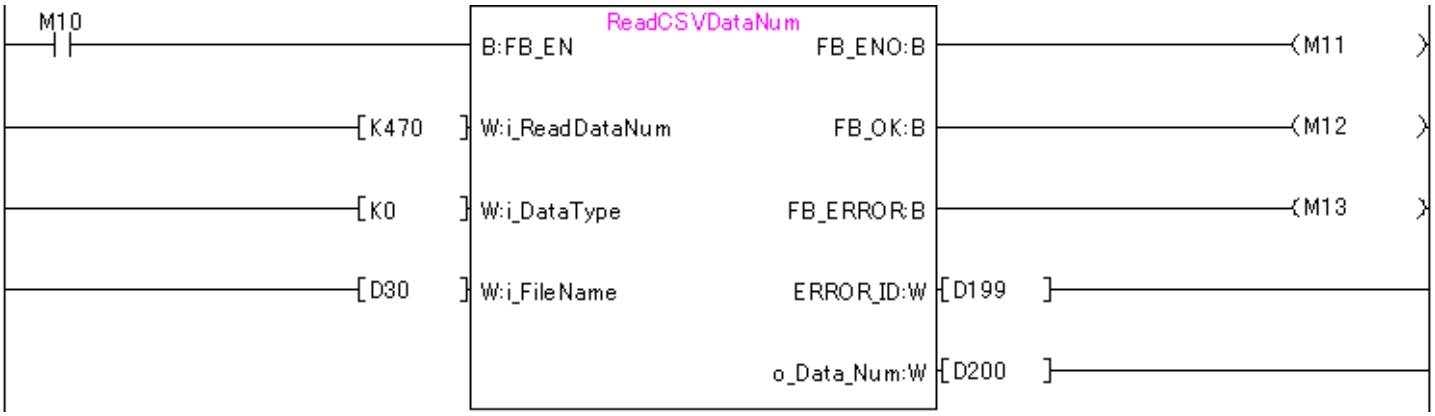
	A	B	C	D
1	25185	25699	26213	26727
2	285	2599	2213	26
3	12233	35466	26213	26727
4	285	2599	2213	26
5	1	2		
6				

The following is the data structure created when the file is saved as a CSV format.

25185	,	25699	,	26213	,	26727	CR/LF
285	,	2599	,	2213	,	26	CR/LF
12233	,	35466	,	26213	,	26727	CR/LF
285	,	2599	,	2213	,	26	CR/LF
1	,	2	,	(null)	,	(null)	CR/LF

When the FB is executed with the following settings,

20 is stored in D200 regardless of the data type specification.



Version Upgrade History

Version	Date	Description
1.00A	2011/03/22	First edition
1.01B	2013/04/12	This FB has been improved so that timeout of the read-out processing of the number of data can be detected.

Note

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

Appendix 1 - Application Examples

File operation FB application examples

System configuration

Power supply module	CPU Module	Empty (X10~X1F)	QY40 (Y20~Y2F)

Device list

Data register

Device	FB function name	Application (ON details)
D0	No. of data read from binary file	Start device No. of file name
D13		Binary read error code
D14		Device No. of number of read data
D30	No. of data read from CSV file	Start device No. of file name
D37		CSV read error code
D38		Device No. of number of read data

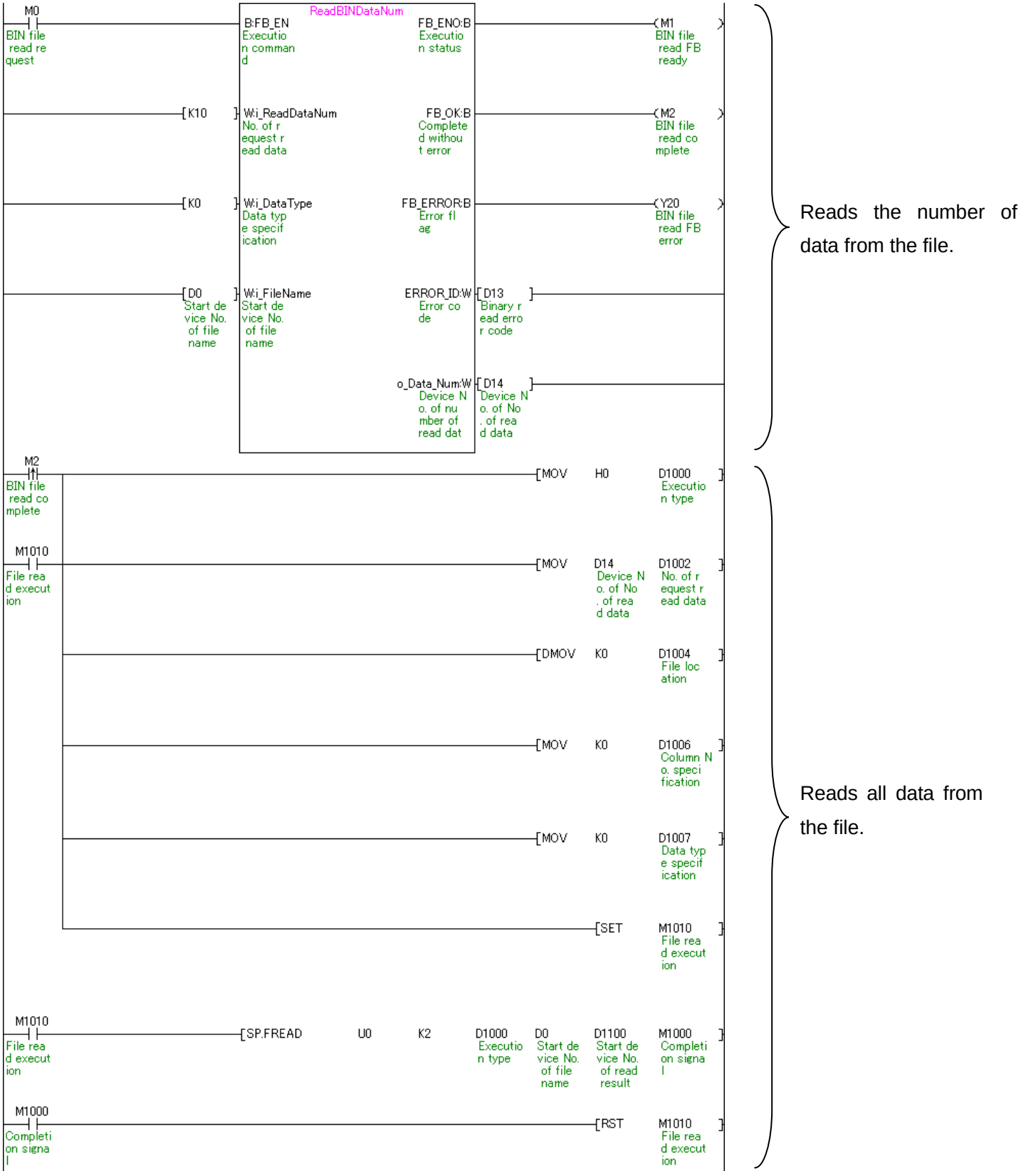
External output (checks)

Device	FB function name	Application (ON details)
Y20	No. of data read from binary file	BIN file read FB error
Y21	No. of data read from CSV file	CSV file read FB error

Relay

Device	FB function name	Application (ON details)
M0	No. of data read from binary file	BIN file read request
M1		BIN file read FB ready
M2		BIN file read complete
M3	No. of data read from CSV file	CSV file read request
M4		CSV file read FB ready
M5		CSV file read complete

M+CPU-File_ReadBINDataNum (No. of data read from binary file)



M+CPU-File_ReadCSVDataNum (No. of data read from CSV file)