

**CHARACTER STRING OPERATION FB LIBRARY REFERENCE MANUAL**

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Reference Manual Revision History

Reference Manual Number	Date	Description
FBM-M053-A	2011/03/22	First edition

1. M+CPU-String\_Compare (Character string compare)

**FB Name**

M+CPU-String\_Compare

## Function Overview

Item	Description					
Function overview	Compares the character string 1 with character string 2, and outputs the result.					
Symbol	<div><div>M+CPU-String_Compare</div><div><div><div>Execution command</div><div>B : FB_EN</div></div><div><div>FB_ENO : B</div><div>Execution status</div></div></div><div><div><div>Start device of character string 1</div><div>W : i_String1</div></div><div><div>FB_OK : B</div><div>Completed without error</div></div></div><div><div><div>Start device of character string 2</div><div>W : i_String2</div></div><div><div>FB_ERROR : B</div><div>Error flag</div></div></div><div><div><div>No. of characters to be compared</div><div>W : i_StringLength</div></div><div><div>ERROR_ID : W</div><div>Error code</div></div></div><div><div><div></div><div>o_Results : W</div></div><div><div>Comparison result</div></div></div></div>					
Applicable hardware and software	Hardware details					
	<table><tr><td rowspan="2">Q series</td><td>High performance model</td></tr><tr><td>Universal model</td></tr><tr><td>L series</td><td>LCPU</td></tr></table>	Q series	High performance model	Universal model	L series	LCPU
	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)	<p>For high performance model CPU: 362*</p> <p>*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).</p>					

Item	Description
Function description	<p>1) By turning ON FB_EN (Execution command), the character string 1 and 2 are compared, and the result is stored in the output variable. The comparison is performed whether the ASCII code is larger or smaller.</p> <p>2) When the number of characters to be compared is specified (when not 0), the string up to the specified number of characters is compared. When the specified number of characters to be compared is 0, the string is compared until the NULL code is encountered.</p> <p>3) When the string length is 255 characters or more when the specified number of characters to be compared is 0, characters up to 255th are compared and 256th character and later are ignored.</p> <p>4) 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.</p>
Compiling method	Macro type
Restrictions and precautions	<p>1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation.</p> <p>2) The FB cannot be used in an interrupt program.</p>
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to Appendix - Application example
Relevant manuals	<p>●Operation of I/O signals</p> <p>[When operation completes without error] [When an error occurs]</p>
Relevant manual	MELSEC-Q/L Programming Manual (Common Instructions)

Error codes	
■ Error code list	
Error code	Description
10	The number of characters to be compared is not valid. Set a correct value, and turn OFF FB_EN and then ON again.



## 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.
Start device of character string 1	i_String1	W	Valid device range	Specify the device that stores the character string to be compared.
Start device of character string 2	i_String2	W	Valid device range	Specify the device that stores the character string to be compared.
No. of characters to be compared	i_StringLength	W	0~255	Set the number of characters to be compared. If 0 is set, characters are compared until the NULL code is encountered.

### ■ Output labels

Name	Label 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 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.

Name	Label name	Data type	Initial value	Description
Comparison result	o_Results	W	0	<p>Store the comparison result.</p> <p>The comparison is performed whether the ASCII code is larger or smaller.</p> <p>Character string 1 &gt; Character string 2 → -1 is stored.</p> <p>Character string 1 = Character string 2 → 0 is stored.</p> <p>Character string 1 &lt; Character string 2 → 1 is stored.</p>

#### Version Upgrade History

Version	Date	Description
1.00A	2011/03/22	First edition

#### Note

This chapter includes information related to the M+CPU-String\_Compare 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 Example

Character string operation FB application example

System configuration

Power supply module	CPU Module	Empty	QY40 (Y20~Y2F)
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Device list

Data register

Device	FB function name	Application (ON details)
D0	Character string compare	Start device of character string 1
D300		Start device of character string 2
D600		No. of characters to be compared
D601		Character string compare error code
D602		Comparison result

External output (checks)

Device	FB function name	Application (ON details)
Y20	Character string compare	Character string compare FB error

Relay

Device	FB function name	Application (ON details)
M0	Character string compare	Character string compare request
M1		Character string compare FB ready
M2		Character string compare complete



M+CPU-String\_Compare (Character string compare)

