# Renaming the specified file

SP.FRENAME

FX5S **FX5UJ** **FX5U** **FX5UC**

This instruction renames the specified file or folder in an SD memory card.

Ladder	ST
⌐ ⌐ (U) (s1) (d1) (s2) (s3) (d2)	ENO:=SP_FRENAME(EN,U,s1,s2,s3,d1,d2);

FBD/LD
EN   ENO U   d1 s1   d2 s2 s3

Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(U)	Dummy	■FX5S CPU module U1 ■FX5UJ CPU module U1 to U8 ■FX5U/FX5UC CPU module U1 to U10	Device name	ANY16
(s1)	Drive specification	2 (fixed)[*1]	16-bit signed binary	ANY16
(d1)	Start device where the control data is stored	☞ Page 564 Control data (d1)	Word	ANY16_ARRAY (Number of elements: 2)
(s2)	Start device where the file name or folder name to be changed is stored	☞ Page 565 File name/folder name to be changed (s2)	Unicode string	ANYSTRING_DOUBLE
(s3)	Start device where the new file name/folder name after the change is stored	☞ Page 566 File name/folder name after the change (s3)	Unicode string	ANYSTRING_DOUBLE
(d2)	Bit device that turns on upon completion of the processing	—	Bit	ANYBIT_ARRAY (Number of elements: 2)
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

*1   Only drive 2 (for the SD memory card) can be set.

■Applicable devices
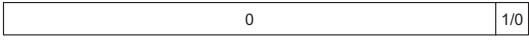
Operand	Bit	Word			Double word		Indirect specification	Constant				Others
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	$		(U)
(U)	—	—	—	—	—	—	—	—	—	—		○
(s1)	○	○	—	—	—	—	○	○	—	—		—
(d1)	—	○	—	—	—	—	○	—	—	—		—
(s2)	—	○	—	—	—	—	○	—	—	○		—
(s3)	—	○	—	—	—	—	○	—	—	○		—
(d2)	○*1	○*2	—	—	—	—	—	—	—	—		—

*1 S cannot be used.
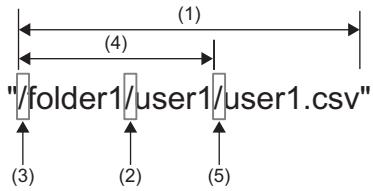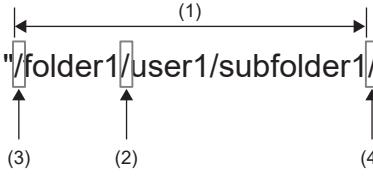
*2 T, ST, and C cannot be used.

Only bit specification of word device is applicable.

■Control data (d1)

Operand: (d1)				
Device	**Item**	**Description**	**Setting range**	**Set by**
+0	Application setting area	b15 ... b0 / 0 / 1/0 b0: Target type setting Specify the type of data (file or folder) to rename. • 0: File • 1: Folder	Refer to the "Description" column.	User
+1	Completion status	The completion status is stored upon completion of the instruction. • 0000H: Completed successfully • Other than 0000H: Completed with an error (error code) (☞ Page 579 Error codes generated for file operation instructions)	—	System

■File name/folder name to be changed (s2)

| Operand: (s2)				
Device	**Item**	**Description**	**Setting range**	**Set by**
+0 to +□	File name character string	When specifying a file, specify the folder path where the file to be renamed is stored and the file name. • When the file name has an extension, specify the name without omitting the extension. • The folder path and file name (including an extension) must be within 253 characters in total. • The folder path must be within 244 characters. (Delimiters are not included.) • Specify one character or more for the file name or folder path in addition to a delimiter. • Do not add a delimiter at the end of a string. • Do not specify a half-width space at the end of the character string or just before each delimiter. • Do not put a period (one-byte) at the end of a string or directly before each delimiter. • Do not specify the system folder ($MELPRJ$) or any file in the system folder. • The number of folder path hierarchies must be within 10 levels. (1): Up to 253 characters (2): Use "/" or "\\" as delimiters for the folder path and file. (3): Can be omitted. When it is omitted, (1) is up to 252 characters. (4): The folder path is up to 244 characters long (243 characters long when (3) is omitted). (5): The delimiter between the folder path and the file name is not included in the number of characters of the folder path.	Unicode string	User
	Folder name character string	When specifying a folder, specify the folder path of the folder to be renamed. • The folder path must be within 244 characters. (Delimiters at the end of the folder path are not included.) • Specify one character or more for the folder path in addition to a delimiter. • Do not specify a half-width space at the end of the character string or just before each delimiter. • Do not put a period (one-byte) at the end of a string or directly before each delimiter. • Do not specify the system folder ($MELPRJ$) or any file in the system folder. • The number of folder path hierarchies must be within 10 levels. (1): Up to 244 characters (2): Use "/" or "\\" as delimiters for the folder path. (3): Can be omitted. When it is omitted, (1) is up to 243 characters. (4): Can be omitted.		

■File name/folder name after the change (s3)
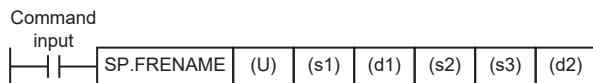
Operand: (s3)				
Device	**Item**	**Description**	**Setting range**	**Set by**
+0 to +□	File name/folder name	Specify the string of the file name/folder name after the change. • When the file name has an extension, specify the name without omitting the extension. • Do not specify a folder path. • The file name (including an extension) must be within 252 characters. • The folder name must be within 243 characters. • Specify one character or more for the file name or folder name. • Do not specify a delimiter. • Do not specify a half-width space at the end of the character string or just before each delimiter. • Do not put a period (one-byte) at the end of a string. • Do not specify the system folder ($MELPRJ$) or any file in the system folder.	Unicode string	User

Processing details

- This instruction rename the file or folder specified by (s2) in the drive specified by (s1) to the file name or folder name specified by (s3). If the file name or folder name specified by (s3) already exists, the instruction is completed with an error.
- SM753 (File being accessed) turns on while the SP.FRENAME instruction is being executed. While SM753 is on, the SP.FRENAME instruction cannot be executed. (If the instruction is executed, no processing is performed.)
- The processing completion bit device (d2) automatically turns on at the execution of the END instruction in the scan in which the completion of processing of the SP.FRENAME instruction is detected. The bit device (d2) turns off at the execution of the END instruction in the next scan. If the SP.FRENAME instruction completes with an error, the error completion device (d2)+1 turns on or off in synchronization with (d2). If the processing completion bit device (d2) is ON, it will automatically turn OFF when the SP.FRENAME instruction is executed.
- If an operation error is detected during the execution of the instruction, (d2) and (d2)+1 do not turn on.
- If the file path + folder name and the folder path exceed the limit number of characters after renaming, the program is finished abnormally. (8006H is stored in (d1)+1.)

■Timing chart
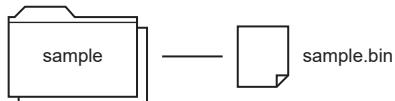
The operation specifications of the file rename function are shown below.

Command
input

| SP.FRENAME | (U) | (s1) | (d1) | (s2) | (s3) | (d2) |
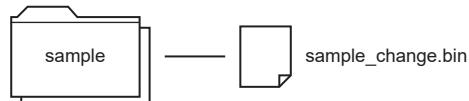
Application setting area (d1)+0	File name to be changed (s2)	File name after the change (s3)
0H	sample/sample.bin	sample_change.bin

[In SD memory card]
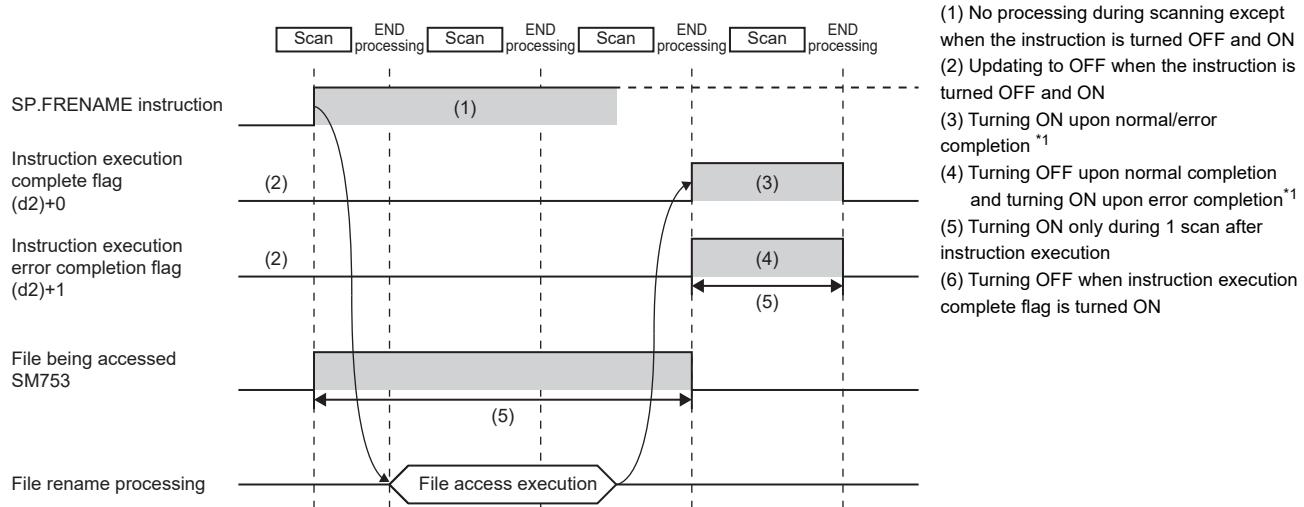
■Before execution of instruction　　　　　　　　　　　　　　■After execution of instruction

sample ——— sample.bin　　　　　　sample ——— sample_change.bin

Below is shown the timing chart (flag updating timing) from the execution of the SP.FRENAME instruction to the completion.

(1) No processing during scanning except when the instruction is turned OFF and ON
(2) Updating to OFF when the instruction is turned OFF and ON
(3) Turning ON upon normal/error completion [1]
(4) Turning OFF upon normal completion and turning ON upon error completion[1]
(5) Turning ON only during 1 scan after instruction execution
(6) Turning OFF when instruction execution complete flag is turned ON

*1　The complete flag is not turned ON when an error is detected during instruction execution.

Program example

When X0 is turned ON, the file name of "sample.bin" stored in the SD memory card is changed to "sample_change.bin".

[Program operation]

1. Control data is created during RUN.

2. The drive contact of X0 is held in M0. When the drive contact is turned ON, the instruction execution complete flag and instruction error completion flag are initialized.

3. The SP.FRENAME instruction is executed.[*1]

4. Since the instruction execution complete flag and instruction error completion flag are ON only during 1 scan, they are held in the M150 and M151 devices to identify the normal/abnormal completion.

*1 The instruction is executed after confirming that the following special devices are OFF to prevent simultaneous execution of another file operation instruction.
· SM606 (Memory card disable request)
· SM753 (File being accessed)
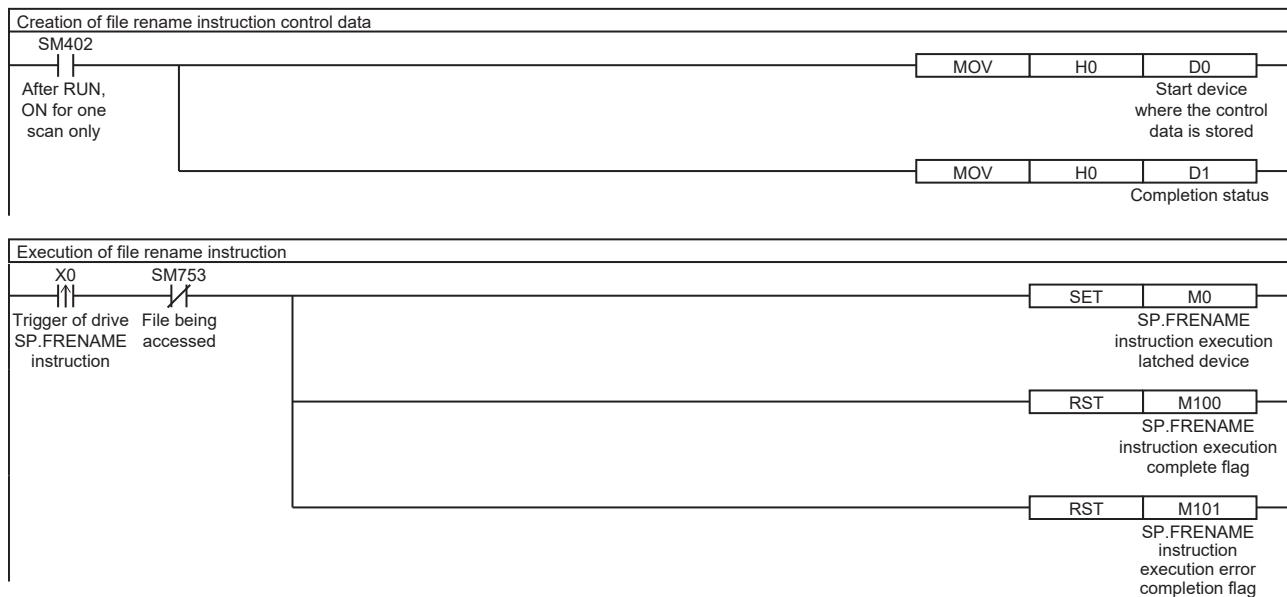
[Devices used]
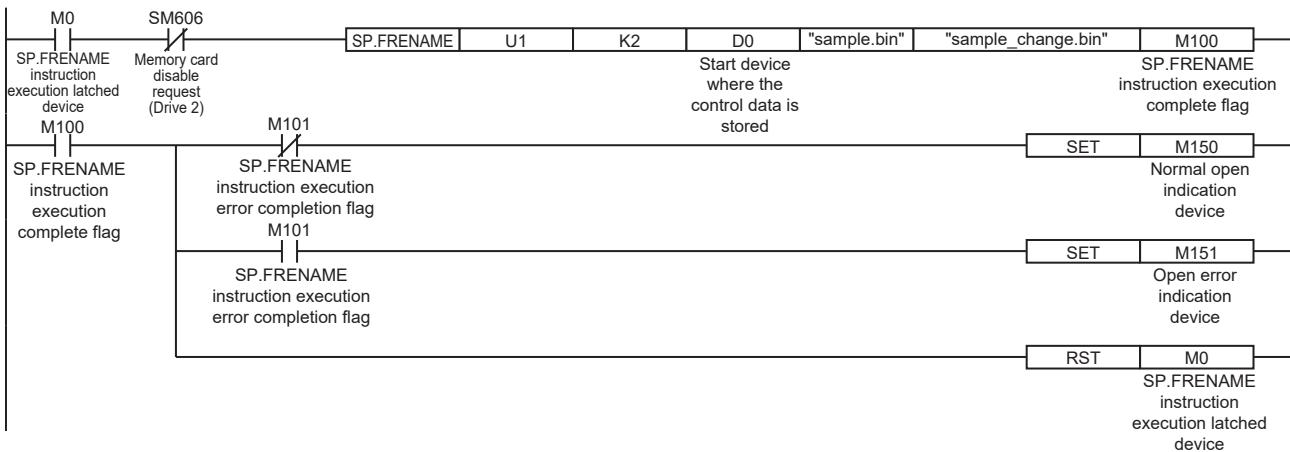
Device	Description
X0	Trigger of drive SP.FRENAME instruction
D0	Start device where the control data is stored • D0: Application setting area • D1: Completion status
M0	SP.FRENAME instruction execution latched device
M100	SP.FRENAME instruction execution complete flag
M101	SP.FRENAME instruction execution error completion flag
M150	Normal open indication device
M151	Open error indication device

[SP.FRENAME instruction operand setting]

Operand	Description	Set value
(U)	Dummy	U1
(s1)	Drive specification	K2 (SD memory card)
(d1)	Start device where the control data is stored	D0: 0H (File) D1: 0H (Completed successfully)
(s2)	Start device where the file name to be changed is stored	"sample.bin"
(s3)	Start device where the new file name after the change is stored	"sample_change.bin"
(d2)	Bit device that turns on upon completion of the processing	M100: Execution complete flag M101: Execution error completion flag

[Ladder program]

```
  M0      SM606                   SP.FRENAME  U1    K2    D0    "sample.bin"  "sample_change.bin"    M100
──┤├──────┤/├─────────────────────[                          Start device                          ]──( )──
SP.FRENAME  Memory card                                      where the                              SP.FRENAME
instruction disable                                          control data is                        instruction execution
execution   request                                          stored                                 complete flag
latched     (Drive 2)
device
  M100                    M101                                                          ┌─────┬──────┐
──┤├─────────────────────┤/├──────────────────────────────────────────────────────────┤ SET │ M150 │
SP.FRENAME               SP.FRENAME                                                      └─────┴──────┘
instruction              instruction execution                                          Normal open
execution                error completion flag                                          indication
complete flag                                                                           device
                         M101                                                           ┌─────┬──────┐
            ─────────────┤├───────────────────────────────────────────────────────────┤ SET │ M151 │
                         SP.FRENAME                                                      └─────┴──────┘
                         instruction execution                                          Open error
                         error completion flag                                          indication
                                                                                        device
                                                                                        ┌─────┬──────┐
            ────────────────────────────────────────────────────────────────────────── ┤ RST │ M0   │
                                                                                        └─────┴──────┘
                                                                                        SP.FRENAME
                                                                                        instruction
                                                                                        execution latched
                                                                                        device
```

[ST program]

```
//(1) Creation of control data for file rename instruction
IF SM402 THEN
D0:=H0; //Application setting area (File)
D1:=H0; //Completion status
END_IF;


//(2) Processing to start up the drive contact (X0)
IF LDP(TRUE,X0) THEN;
//Checking that the file being accessed flag is OFF
IF (SM753 <> TRUE) THEN
SET(TRUE,M0); //Holds drive contact
RST(TRUE,M100); //Initialize instruction execution complete flag
RST(TRUE,M101); //Initialize instruction execution error complete flag
END_IF;
END_IF;


//(3) Execution of file rename instruction
IF M0 THEN
//Checking that the memory card disable request is OFF
IF (SM606 <> TRUE) THEN;
//EN = TRUE (Enable Input, always execute)
//U = U1 (Dummy)
//S1 = 2 (Drive specification, 2 fixed)
//S2 = "sample.bin" (Start device where the file name to be changed is stored)
//S3 = "sample_change.bin" (Start device where the new file name after the change is stored)
//D1 = D0 (Start device where the control data is stored)
//D2 = M100 (Bit device that turns on upon completion of the processing)
SP_FRENAME(TRUE, U1, 2, "sample.bin", "sample_change.bin", D0, M100);
END_IF;
END_IF;


//(4) Checking the instruction execution complete flag
IF M100 THEN
SET((M101 <> TRUE), M150); //Holds instruction execution complete flag
SET(M101, M151); //Holds instruction execution error complete flag
RST(TRUE, M0); //Releasing the drive contact
END_IF;
```

Precautions

- Do not execute the SP.FRENAME instruction in an interrupt program. Doing so may cause malfunction of the module.
- The SP.FRENAME instruction cannot be executed while SM606 (Memory card disable request) is ON. When SM606 is turned ON during execution of the instruction, the program will terminate abnormally. (If the fine renaming has been completed before SM606 is turned ON, the file name will be changed.)
- The SP.FRENAME instruction specifying the system folder ($MELPRJ$) or a file in the system folder cannot be executed.
- Even though the operating status of the CPU module is switched from RUN to STOP during instruction execution, the CPU module continues the processing of the instruction.
- Ensure that the number of characters in a folder path or in the total of a folder path and a file name after changing does not exceed its limit. (The file may be inaccessible or an error may occur.)
- Do not access the file being processed by the SP.FRENAME instruction from other functions. (The file may be corrupt or an error may occur.)
- Do not operate files or folders being accessed from other functions.
- The SP.FRENAME instruction cannot be executed simultaneously with the SP.DEVST instruction, the SP.FTPPUT instruction, and the SP.FTPGET.
- Do not disconnect the power or remove the SD memory card during execution of the SP.FRENAME instruction. (The file may be damaged, or an error may occur.)

Operation error

Error code (SD0/SD8067)	Description
2820H	The storage device of the control data (d1) exceeds the end of the device range.
	The bit label digits specified in (s2) and (s3) are unacceptable settings (the number of digits is not K4).
3405H	The drive specified by (s1) is not the one for the SD memory card.
	The file name/folder name string specified by (s2) cannot be read. • The specified file name string contains no character. • The specified file name string contains 254 characters or more. • The specified folder path contains 245 characters or more. • The specified folder path hierarchies contains 11 levels or more. • When a file is specified, the file name string ends with a delimiter. • The specified file name string has a period (one-byte) at its end or directly before each delimiter.
	The file name/folder name string specified by (s3) cannot be read. • The specified file name/folder name string contains no character. • The specified file name string contains 253 characters or more. • The specified folder name string contains 244 characters or more. • The specified file name string contains a delimiter. • The specified file name string has a period (one-byte) at its end.
	A system folder ($MELPRJ$) which is directly under the root folder is in the folder path specified by (s2).
	$MELPRJ$ is specified for the file name/folder name specified by (s3).
3582H	The SP.FRENAME instruction is executed in an interrupt program.

If the SP.FRENAME instruction completes with an error, an error code is stored in the device specified by (d1)+1. (Note that an error code is not stored if the instruction results in an operation error.)

For the error code stored in (d1)+1, refer to the following.