Deleting the specified file

SP.FDELETE

`FX5S`   `FX5UJ`   `FX5U`   `FX5UC`

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

Ladder	ST
⬜⬜⬜ (U) (s1) (d1) (s2) (d2)	ENO:=SP_FDELETE(EN,U,s1,s2,d1,d2);

FBD/LD
EN — ENO U — d1 s1 — d2 s2

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 536 Control data (d1)	Word	ANY16_ARRAY (Number of elements: 2)
(s2)	Start device where the file name or folder name is stored	☞ Page 536 File name/folder name (s2)	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)	—	○	—	—		—	—	○	—	—	○	—
(d2)	○[*1]	○[*2]	—	—		—	—	—	—	—	—	—
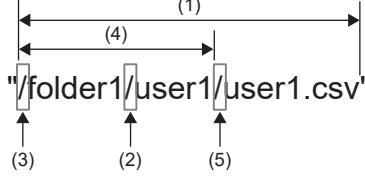
*1   S cannot be used.
*2   T, ST, and C cannot be used.
      Only bit specification of word device is applicable.
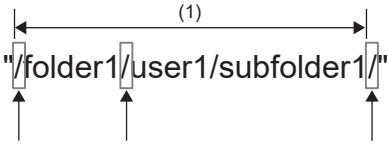
■Control data (d1)

Operand: (d1)				
Device	**Item**	**Description**	**Setting range**	**Set by**
+0	Application setting area	b0: Target type setting Specify the type of data (file or folder) to delete. • 0: File • 1: Folder b1: Empty folder deletion setting Specify whether to delete only empty folders when deleting folders. (This setting is enabled when b0 is 1 (Folder).) • 0: Delete the folder even when it contains data. • 1: Delete the folder only when it is empty.	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 (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 deleted 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 any file in the system folder ($MELPRJ$). • The number of folder path hierarchies must be within 10 levels. "/folder1/user1/user1.csv" (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

Operand: (s2)				
Device	**Item**	**Description**	**Setting range**	**Set by**
+0 to +□	Folder name character string	When specifying a folder, specify the folder path of the folder to be deleted. • 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 it. • The number of folder path hierarchies must be within 10 levels. (1) "/folder1/user1/subfolder1/" (3)　(2)　(4) (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.	Unicode string	User

Processing details

- This instruction deletes the file or folder specified by (s2) in the drive specified by (s1).
- SM753 (File being accessed) turns on while the SP.FDELETE instruction is being executed. While SM753 is on, the SP.FDELETE 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.FDELETE instruction is detected. The bit device (d2) turns off at the execution of the END instruction in the next scan. If the processing completion bit device (d2) is ON, it will automatically turn OFF when the SP.FDELETE instruction is executed.
- If the SP.FDELETE instruction completes with an error, the error completion device (d2)+1 turns on or off in synchronization with (d2).
- If an operation error is detected during the execution of the instruction, (d2) and (d2)+1 do not turn on.
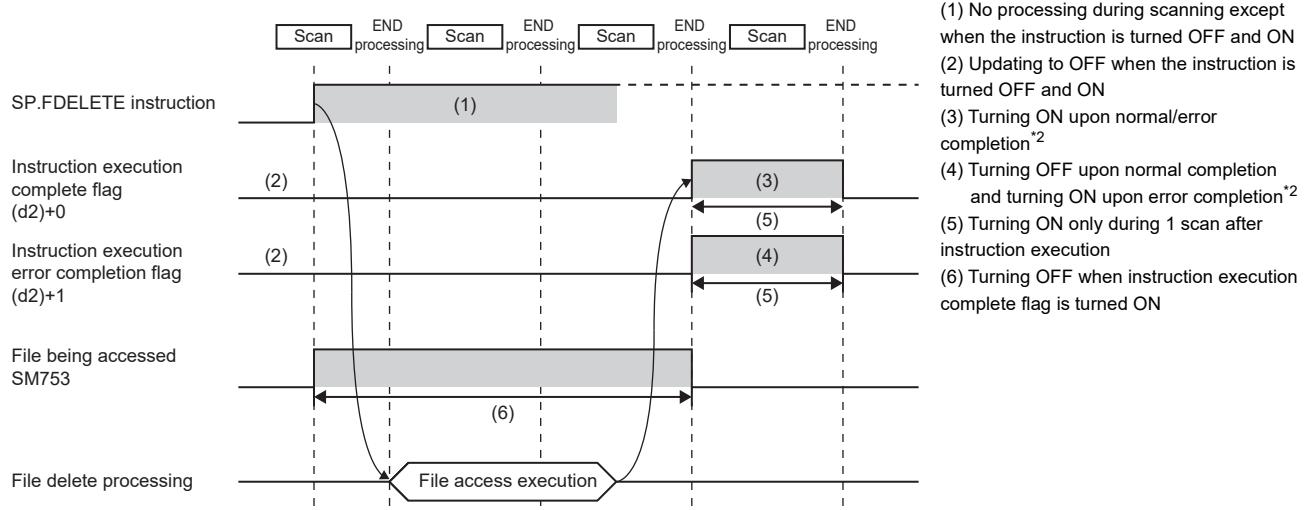
■Timing chart

The operation specifications of the file delete function are shown below.

```
Command
  input
  ├─┤ ├┤  SP.FDELETE  (U)  (s1)  (d1)  (s2)  (d2)
```

Application setting area (d1)+0	File name/folder name (s2)
0H, 1H, 3H	[When a file is specified] sample/sample.bin [When a folder is specified] sample

[In SD memory card]

■When application setting area is 0H (File)

■When application setting area is 1H ("Folder" + "Delete the folder even when it contains data.")

■When application setting area is 3H ("Folder" + "Delete the folder only when it is empty.")

*1 The file or folder is deleted.

Below is shown the timing chart (flag updating timing) from the execution of the SP.FDELETE 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[*2]

(4) Turning OFF upon normal completion and turning ON upon error completion[*2]

(5) Turning ON only during 1 scan after instruction execution

(6) Turning OFF when instruction execution complete flag is turned ON

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

Program example

When X0 is turned ON, the "\sample\sample.csv" file stored in the SD memory card is deleted.

[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.FDELETE 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)
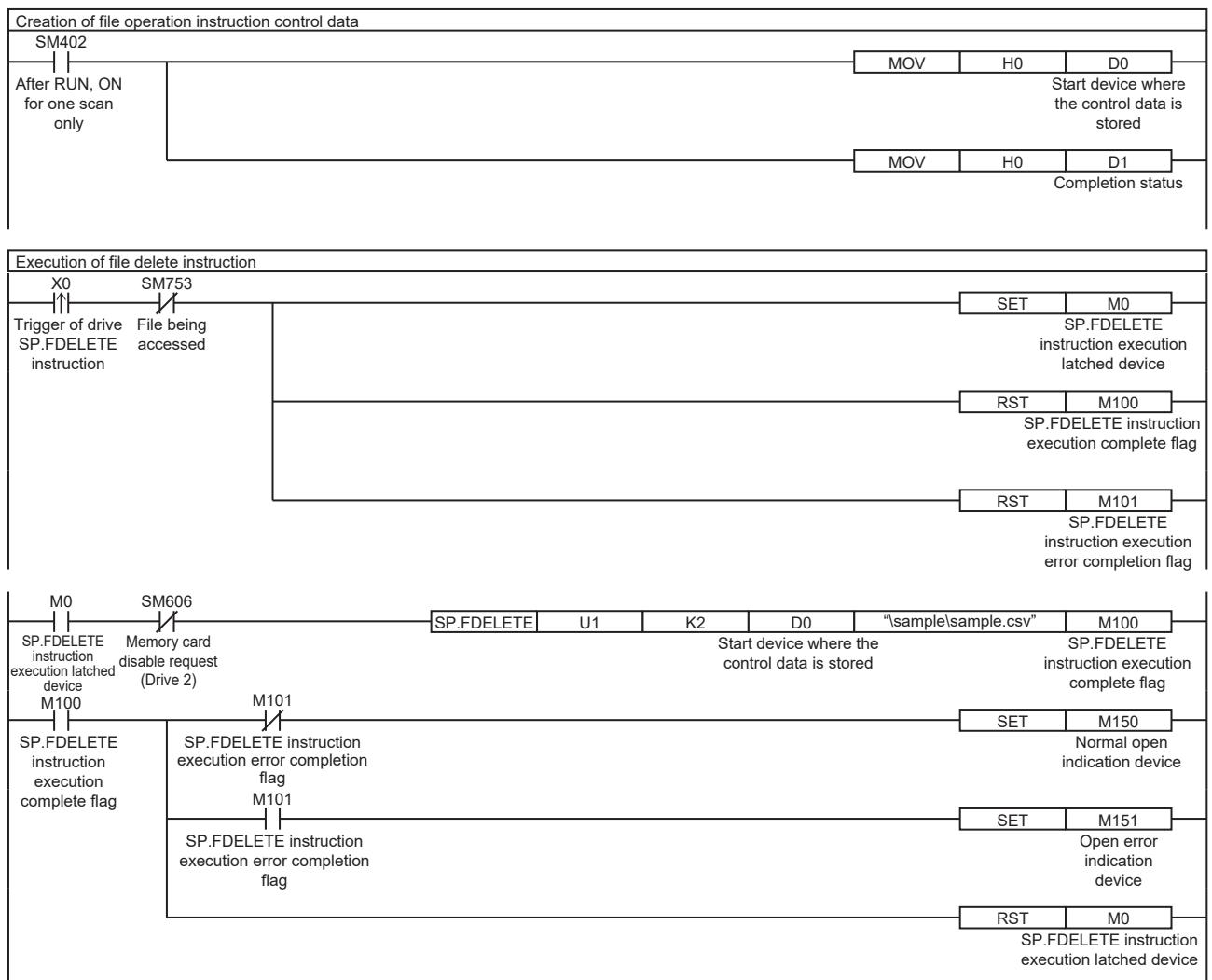
[Devices used]

Device	Description
X0	Trigger of drive SP.FDELETE instruction
D0	Start device where the control data is stored • D0: Application setting area • D1: Completion status
M0	SP.FDELETE instruction execution latched device
M100	SP.FDELETE instruction execution complete flag
M101	SP.FDELETE instruction execution error completion flag
M150	Normal open indication device
M151	Open error indication device

[SP.FDELETE 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 is stored	"\sample\sample.csv"
(d2)	Bit device that turns on upon completion of the processing	M100: Execution complete flag M101: Execution error completion flag

8

[Ladder program]

Creation of file operation instruction control data

```
SM402
──┤├──────────────────────────────────────────────┤ MOV │  H0  │  D0  │
After RUN, ON                                                          Start device where
for one scan                                                          the control data is
only                                                                       stored
                                                    ┤ MOV │  H0  │  D1  │
                                                                      Completion status
```

Execution of file delete instruction

```
   X0       SM753
──┤↑├────────┤/├─────────────────────────────────────┤ SET │   M0   │
Trigger of drive  File being                                       SP.FDELETE
SP.FDELETE      accessed                                       instruction execution
instruction                                                       latched device

                                                       ┤ RST │  M100  │
                                                              SP.FDELETE instruction
                                                              execution complete flag

                                                       ┤ RST │  M101  │
                                                                   SP.FDELETE
                                                              instruction execution
                                                              error completion flag
```

```
   M0       SM606
──┤├─────────┤/├────┤ SP.FDELETE │ U1 │ K2 │ D0 │ "\sample\sample.csv" │ M100 │
SP.FDELETE   Memory card                            Start device where the         SP.FDELETE
instruction   disable request                        control data is stored      instruction execution
execution latched  (Drive 2)                                                         complete flag
device
   M100                M101
──┤├─────────────────┤/├──────────────────────────────┤ SET │  M150  │
SP.FDELETE       SP.FDELETE instruction                           Normal open
instruction        execution error completion                    indication device
execution           flag
complete flag        M101
              ──┤├──────────────────────────────────────┤ SET │  M151  │
                  SP.FDELETE instruction                        Open error
                  execution error completion                    indication
                  flag                                           device

                                                       ┤ RST │   M0   │
                                                              SP.FDELETE instruction
                                                              execution latched device
```

[ST program]

```
//(1) Creation of file delete instruction control data
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 delete 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\sample.csv" (Start device where the file name 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_FDELETE(TRUE, U1, 2, "\sample\sample.csv", 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

- The SP.FDELETE instruction cannot be performed in user interrupt programs. An error (3582H) will occur.
- The SP.FDELETE instruction cannot be executed while SM606 (Memory card disable request) is ON. If SM606 is turned ON after the instruction is executed, the program will terminate abnormally. (The data deleted before SM606 is turned ON will not be restored.)
- The SP.FDELETE instruction specifying the system folder ($MELPRJ$) or a file in the system folder cannot be executed. If the SP.FDELETE instruction is executed, a calculation error (3405H) will occur.
- 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.
- If the instruction is completed with an error during processing, the file or folder already deleted is not restored.
- When the size of a file to be deleted or the number of files to be deleted becomes larger, the instruction will take more time to complete.
- Do not access the file being processed by the SP.FDELETE 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.FDELETE instruction cannot be executed simultaneously with the SP.DEVST instruction, the SP.FTPPUT instruction, and the SP.FTPGET.
- When the application setting area of the SP.FDELETE instruction is 1H ("Folder" + "Delete the folder even when it contains data"), if the folder specified in (s2) contains a folder whose path exceeds 244 characters or a file exceeding 253 characters, the 8006H error will occur.
- When the application setting area of the SP.FDELETE instruction is 3H ("Folder" + "Delete the folder only when it is empty"), if the folder specified in (s2) contains any file or folder, the 8004H error will occur.
- Do not disconnect the power or remove the SD memory card during execution of the SP.FDELETE 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 number of bit label digits specified in (s2) is an unallowable setting (the number of digits is not K4).
	The size of the read data exceeds the read device size.
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. • The specified file name string has a period (one-byte) at its end or directly before each delimiter. • When a file is specified, the file name string ends with a delimiter.
	A system folder ($MELPRJ$) which is directly under the root folder is in the folder path specified by (s2).
3582H	The SP.FDELETE instruction is executed in an interrupt program.

If the SP.FDELETE 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.

☞ Page 579 Error codes generated for file operation instructions