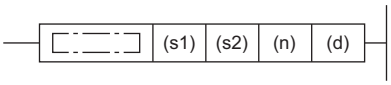
Writing data to the data memory

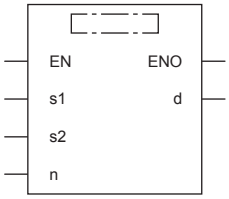
SP.DEVST

FX5S FX5UJ FX5U FX5UC

This instruction writes the specified number of points of data to the device data storage file in data memory.

Ladder diagram	Structured text
	ENO:=SP_DEVST(EN,s1,s2,n,d);

FBD/LD



Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s1)	Write offset of device data storage file (specified in units of 16-bit words)	0 to 63	32-bit unsigned binary	ANY32
(s2)	Start device to which data is to be written	—	Word	ANY16*1
(n)	Number of write points	1 to 64	16-bit unsigned binary	ANY16
(d)	(d): Completion device, (d)+1: Error completion device	—	Bit	ANYBIT_ARRAY (Number of elements: 2)
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

*1 When specifying setting data by using a label, define an array to secure enough operation area and specify an element of the array label.

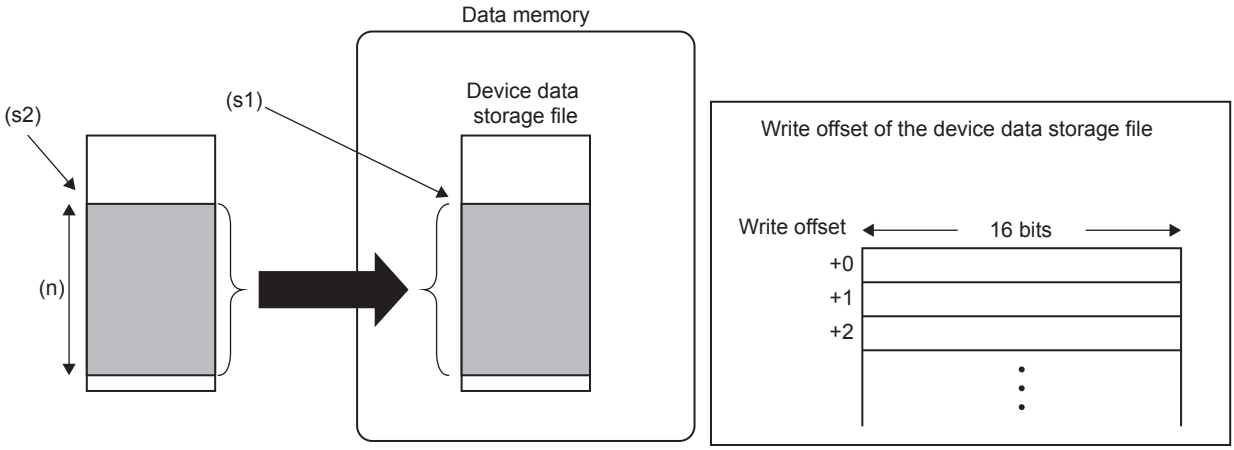
■Applicable devices

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	$	
(s1)	—	○	—	—	○	—	○	○	—	—	—
(s2)	—	○	—	—	—	—	○	—	—	—	—
(n)	○*1	○	—	—	—	—	○	○	—	—	—
(d)	○*1	○*2	—	—	—	—	—	—	—	—	—

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

Processing details

- These instructions retrieves the specified number of points of data specified by (n) from the device specified by (s2) and write it to the write offset in the device specified by (s1) in the device data storage file in data memory. (s1) indicates the offset from the start of the device data storage file and can be specified by word offsets (incremented by 1 every 16 bits).



- The completion device specified by (d) automatically turns on upon execution of the END instruction following the detection of processing completion of the SP.DEVST instruction and turns off upon execution of the END instruction in the next scan, so it is used as the execution complete flag of the SP.DEVST instruction.
- If the SP.DEVST instruction completes with an error, the error completion device specified by (d)+1 turns on or off at the same time as the completion device specified by (d). Therefore, the device is used as the error completion flag of the SP.DEVST instruction.
- SM753 (File being accessed) turns on while the SP.DEVST instruction is executed. If SM753 has already been on, the SP.DEVST instruction cannot be executed. (If executed, no processing is performed.)
- If an error is detected during execution of the SP.DEVST instruction, the completion device (d), error completion device (d)+1, and SM753 do not turn on.
- Use the S(P).DEVLD instruction to read device data from the device data storage file to any specified device. (☞ Page 481 S(P).DEVLD)

Precautions

- The value written to data memory is the one at execution of the SP.DEVST instruction.
- Execution of the SP.DEVST instruction increases SD634 and SD635. The number of writes to the data memory of the CPU module is limited. If the data memory write count index exceeds twenty thousands, an error occurs with error code 1080H.
- To prevent the data memory write count from being increased by careless instruction execution, SD771 can be set to limit the write count per day. The maximum number of writes is 8 by default. Change the maximum number of writes by using SD771 as needed. If the specified write count is exceeded, an error occurs with error code 3421H. The number of executions of the instruction to write to data memory per day is initialized to 0 at the following timing.

  - When power off→on, or when reset→reset canceled.
  - The date (year, month, day) in clock data is changed by time advancement.
  - CPU module internal clock data (year, month, day) is changed by the clock data change function.
- Data is written to the device data storage file when the END instruction is executed. Data is written to the device data storage file when the END instruction is executed immediately after the SP.DEVST instruction is executed. Thus, depending on the number of write points, writing to the device data storage file may involve multiple scans. Check the completion device to see whether the writing is completed.
- When executing SP.DEVST instruction during backup by the backup restore function, the writing is completed abnormally. Do not execute the SP.DEVST instruction during backup. Executing the SP.DEVST instruction after confirming that the backup executing flag (SM1350) is off is recommended.

Operation error

Error code (SD0/SD8067)	Description
2820H	• The value specified by (s1), and (s1)+(n) are out of range of the device data storage file. • Any of the device area ranges specified in (s2) and (d) exceed the corresponding device range.
2822H	Device that cannot be specified is specified.
3405H	The value stored in a device specified by (n) is 0.
3421H	When the SP.DEVST instruction is executed, the write count of the day exceeds the value specified in SD771.
	When the SP.DEVST instruction is executed, a value out of the range (1 to 32767) is set in SD771.