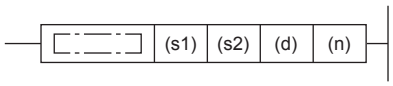
8.17 Ramp Signal Instruction

Ramp signal

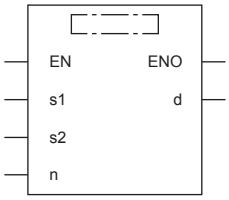
RAMPF

FX5S FX5UJ FX5U FX5UC

This instruction obtains the data which changes between the start value (initial value) and the end value (target value) over the specified "n" times.

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

FBD/LD



Setting data

■Descriptions, ranges, and data types

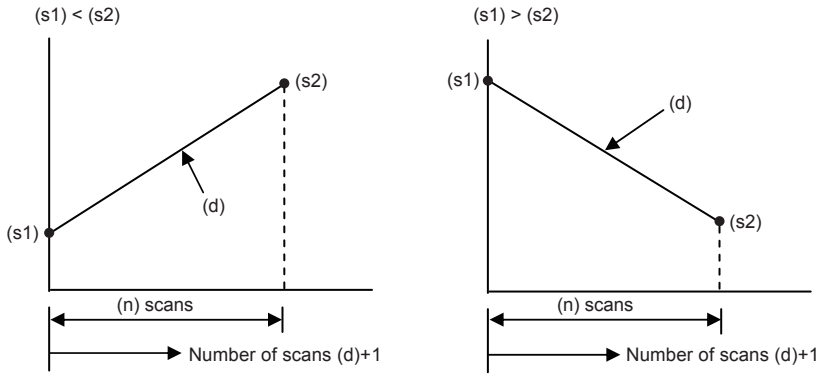
Operand	Description	Range	Data type	Data type (label)
(s1)	Initial value of ramp	—	16-bit signed binary	ANY16
(s2)	Target value of ramp	—	16-bit signed binary	ANY16
(d)	(d)+0: Current value	—	16-bit signed binary	ANY16_ARRAY (Number of elements: 2)
	(d)+1: Number of scans			
(n)	Ramp transfer time (scan)	1 to 32767	16-bit unsigned binary	ANY16_U
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

■Applicable devices

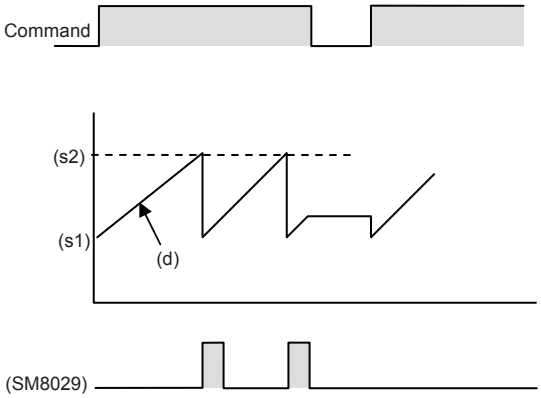
Operand	Bit	Word			Double word		Indirect specification	Constant			Others
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	$	
(s1)	○	○	○	○	—	—	○	○	—	—	—
(s2)	○	○	○	○	—	—	○	○	—	—	—
(d)	○	○	○	○	—	—	○	—	—	—	—
(n)	○	○	○	○	—	—	○	○	—	—	—

Processing details

- When the start value (s1) and the end value (s2) have been specified and the command input is set to ON, the value obtained by adding a value divided equally by "n" times to (s1) in the next operation cycle is stored to (d). By combining this instruction and an analog output, the cushion start/stop command can be output.



- The number of scans ("0" to "n") is stored in (d)+1.
- The time from start to the end value is the operation cycle multiplied by "n" times.
- If the command input is set to OFF in the middle of operation, execution is paused. (The current value stored in (d) is held, and the number of scans stored in (d)+1 is cleared.) When the command input is set to ON again, (d) is cleared, and the operation is started from (s1).
- After transfer is completed, the instruction execution complete flag SM8029 turns ON, and the (d) value is returned to the (s1) value.

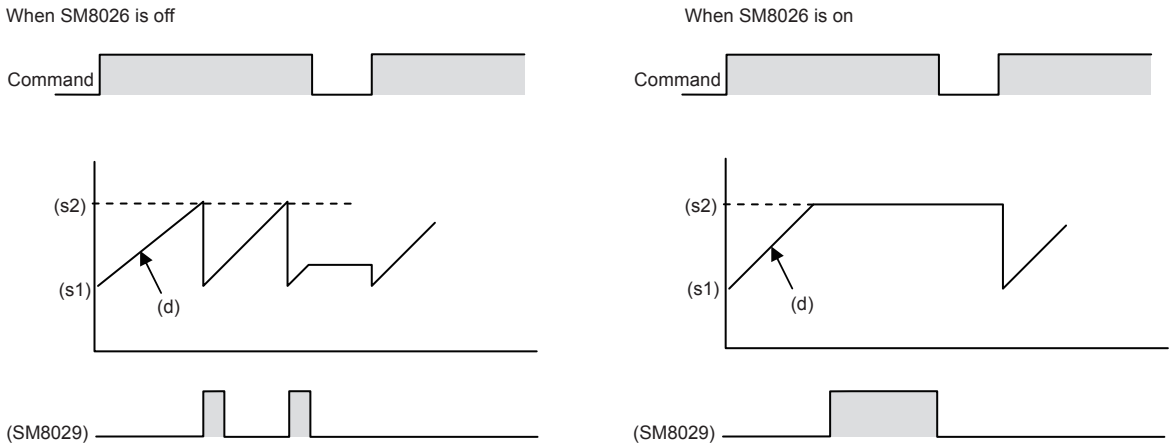


- When the operation result is acquired at a constant time interval (constant scan mode), write a prescribed scan time (which is longer than the actual scan time) to SD8039 and set SM8039 to ON. For example, when "20 ms" is written to SD8039 and "n" is set to 100, the (d) value will change from (s1) to (s2) in 2 seconds.
- The value used in the constant scan mode can be set in the parameter setting of an engineering tool (constant scan execution interval setting of CPU parameter).

For details on the constant scan, refer to MELSEC iQ-F FX5 User's Manual (Application).

For details on the engineering tool, refer to GX Works3 Operating Manual.

• The contents of (d) are changed as follows depending on the ON/OFF status of the mode flag SM8026.



Precautions

To specify a latched (battery backed) type device as (d) when setting the CPU module to the RUN mode while the command input is ON, clear (d) in advance.

Operation error

Error code (SD0/SD8067)	Description
2820H	The device range specified by (d) exceeds the corresponding device range.
3405H	The value specified by (n) is outside the following range. 1 to 32767