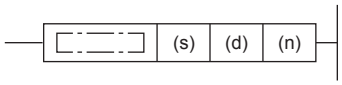
Reading the newest data from the data table

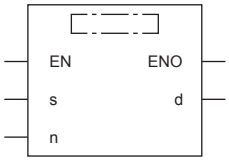
POP(P)

FX5S FX5UJ FX5U FX5UC

These instructions read the latest data written by a shift write (SFWR) instruction for FIFO/FILO control.

Ladder diagram	Structured text
	ENO:=POP(EN,s,n,d); ENO:=POPP(EN,s,n,d);

FBD/LD



Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s)	Head device number storing the first-in data (including pointer data) (start number of the word device storing the data)	—	16-bit signed binary	ANY16
(d)	Device number storing last-out data	—	16-bit signed binary	ANY16
(n)	Length of data array (Add "1" because pointer data is also included.)	2 to 32768	16-bit unsigned binary	ANY16_U
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

■Applicable devices

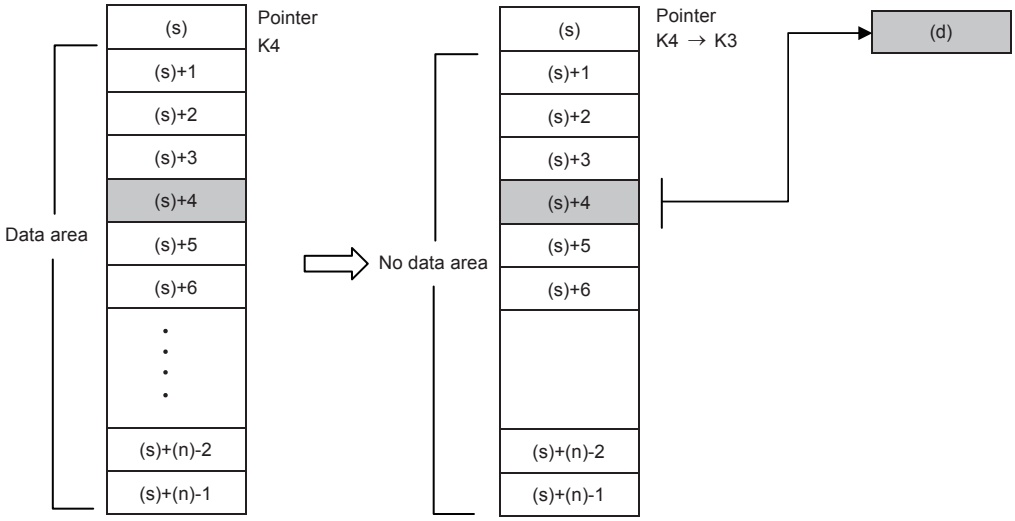
Operand	Bit	Word			Double word		Indirect specification	Constant			Others
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	$	
(s)	○	○	○	○	—	—	○	—	—	—	—
(d)	○	○	○	○	—	—	○	—	—	—	—
(n)	○	○	○	○	—	—	○	○	—	—	—

Processing details

- Every time the instruction is executed for the word devices (s) to (s)+(n)-1, a device "(s) + Pointer data (s)" is read to (d). (The last data entry written by the shift write (SFWR) instruction for first-in first-out control is read to (d).) Specify any value between 2 and 32767 for (n).
- Subtract "1" from the value of the pointer data (s).

Data for FILO control

	Description
(s)	Pointer data (amount of data stored)
(s)+1	Data area (First-in data written by shift write (SFWR) instruction)
(s)+2	
(s)+3	
⋮	
(s)+(n)-3	
(s)+(n)-2	
(s)+(n)-1	

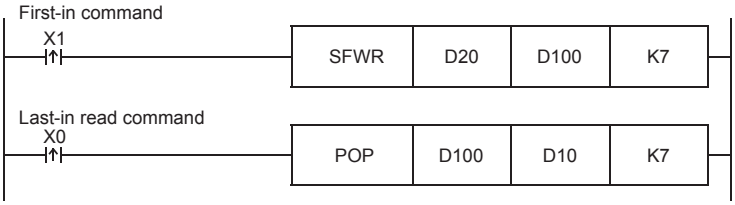


Precautions

- If programed in the continuous operation type, the POP(P) instructions are executed in every operation cycle. As a result, expected operation may not be achieved. Usually, program the POP(P) instructions in the "pulse operation type", or let them be executed by a "pulsed command contact".
- When the current value of the pointer (s) is "0", the zero flag SM8020 turns ON and the POP(P) instructions are not executed.
- When the current value of the pointer (s) is "1", "0" is written to (s) and the zero flag SM8020 turns ON.

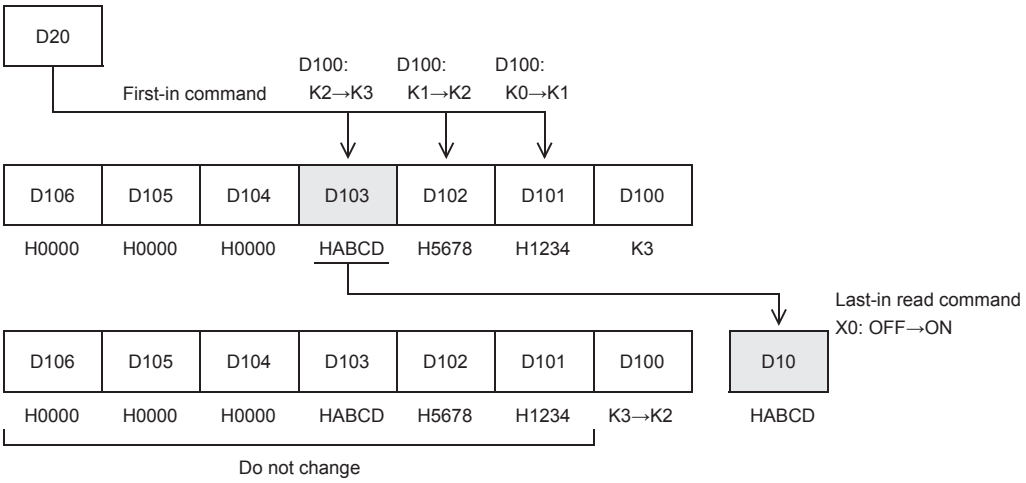
Program example

Among values stored in D20 input first to D101 to D106, the last value input is stored to D10, and “1” is subtracted from the number of stored data (pointer D100) every time X0 turns ON.



When the first-in data is as shown in the table below

Pointer	Data					
D100	D101	D102	D103	D104	D105	D106
K3	H1234	H5678	HABCD	H0000	H0000	H0000



Operation error

Error code (SD0/SD8067)	Description
2820H	The device range (s)+(n)-1 exceeds the device.
3405H	(s) is larger than (n)-1.
	(s) is smaller than 0.
	The value set in (n) is other than the following. 2≤(n)≤32768