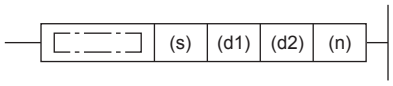
7.6 Digital Switch

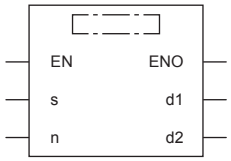
DSW

FX5S FX5UJ FX5U FX5UC

This instruction reads the set value of digital switches. This instruction can read a set of 4 digits (n = K1) or two sets of 4 digits (n = K2).

Ladder diagram	Structured text
	ENO:=DSW(EN,s,n,d1,d2);

FBD/LD



Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s)	Start device number to connect a digital switch	—	Bit	ANYBIT_ARRAY (Number of elements: 4)
(d1)	Start device number of strobe signal output	—	Bit	ANYBIT_ARRAY (Number of elements: 4)
(d2)	Device number storing the numeric value of a digital switch	0 to 9999	16-bit signed binary	ANY16
(n)	Total number of 4-digit switch sets	1, 2	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)	○*1	—	—	—	—	—	—	—	—	—	—
(d1)	○*2	—	—	—	—	—	—	—	—	—	—
(d2)	—	○	○	○	—	—	○	—	—	—	—
(n)	—	—	—	—	—	—	—	○	—	—	—

*1 Only X can be used.
*2 Only Y can be used.

Processing details

The value of each digital switch connected to (s) is input by the time division method (in which the value is input in turn from the 1st digit by 100 ms interval output signal), and stored to (d2). A numeric value from 0 to 9999 (up to 4 digits) can be read, the first set is stored to (d2), and the second set is stored to (d2)+1.

When using one set of 4 digits (n = K1)

A 4-digit BCD digital switch connected to (s) to (s)+3 is read in turn by the strobe signal (d1) to (d1)+3, and stored in binary format to (d2).

When using two sets of 4 digits (n = K2)

A 4-digit BCD digital switch connected to (s) to (s)+7 is read in turn by the strobe signal (d1) to (d1)+3. (s) to (s3)+3 is stored in (d2) and (s)+4 to (s)+7 is stored in (d2)+1 as BIN format.

For the connection example of digital switch, refer to the following manual.

MELSEC iQ-F FX5S/FX5UJ/FX5U/FX5UC User's Manual (Hardware)

Precautions

- Though the contents of (d2) do not change, all of (d1) to (d1)+3 turn OFF.
- When one set of 4 digits (n = K1) are used, four devices are occupied starting from (s).
- When two sets of 4 digits (n = K2) are used, eight devices are occupied starting from (s), and two devices are occupied starting from (d2).
- When connecting a digital switch of less than 4 digits, it is not necessary to wire the strobe signal (output for digit specification) (d1) to unused digits. Because unused digits are occupied also by this instruction, however, they cannot be used for any other purpose.
- For continuously receiving digital switch values, make sure to use a transistor output type CPU module.
- Use BCD output type digital switches.
- The DSW instruction can only be executed four times in a program.

Operation error

Error code (SD0/SD8067)	Description
3405H	(n) is other than 1 or 2.
	The value specified by (s) to (s)+3 and (s)+4 to (s)+7 is other than 0 to 9.
2820H	The device range specified by (s), (d1), (d2) exceeds the corresponding device range.
1811H	The number of the DSW instructions which are used simultaneously exceeds four.