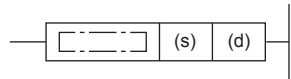# Converting BCD 4-digit data to binary data
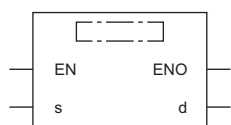
BIN(P)

FX5S **FX5UJ** **FX5U** **FX5UC**

These instructions convert the binary-coded decimal data in the device specified by (s) to binary data, and store the converted data in the device specified by (d).

Use this instruction to convert a binary-coded decimal (BCD) value such as a value set by a digital switch into binary (BIN) data and to receive the converted binary data so that the data can be handled in operations in CPU module.

Ladder diagram	Structured text
⎯⎯[⬚⋅⬚⋅⬚] (s) (d) ⎯	ENO:=BIN(EN,s,d); ENO:=BINP(EN,s,d);

FBD/LD
⬚⋅⬚⋅⬚ EN   ENO s   d

Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s)	Binary-coded decimal data or the head device where the binary-coded decimal data is stored	0 to 9999	BCD 4-digit	ANY16
(d)	Head device for storing the binary data	—	16-bit signed binary	ANY16
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)	○	○	○	○	—	—	○	—	—	—	—

Processing details

- These instructions convert the BCD 4-digit data (0 to 9999) in the device specified by (s) to 16-bit binary data, and store the converted data in the device specified by (d).
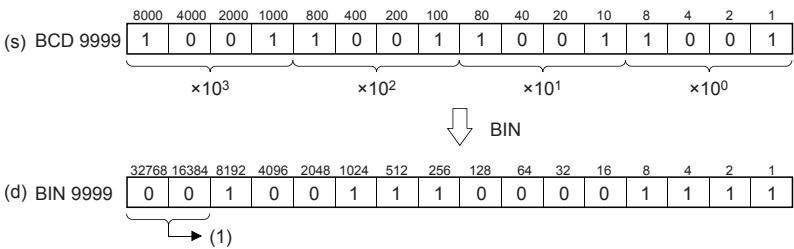
(1): Filled with 0s.

- The data in the device specified by (s) can be converted if it is in the range from 0 to 9999 (BCD).

• The table below shows digit specification for the data in the device specified by (s) and (d).
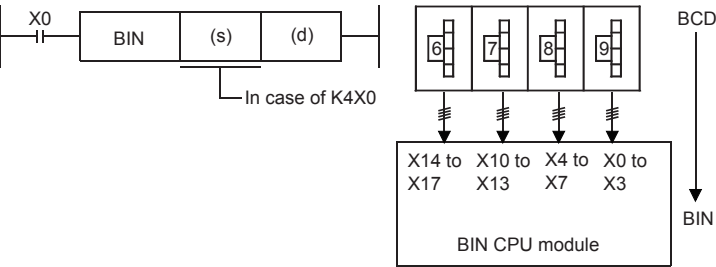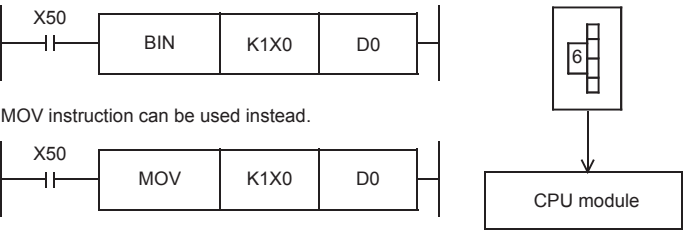

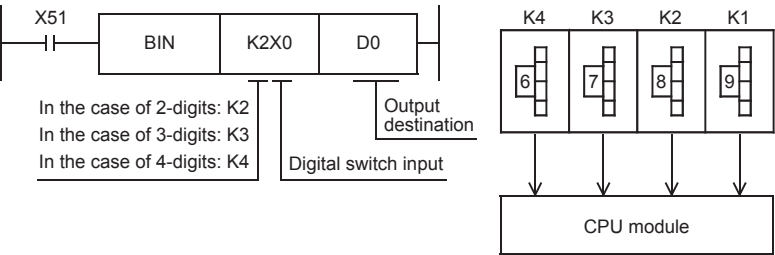| (d)	Number of digits	Data range
K1X0	1-digit	0 to 9
K2X0	2-digit	00 to 99
K3X0	3-digit	000 to 999
K4X0	4-digit	0000 to 9999

Precautions

• Binary data is used in all operations in CPU module including arithmetic operations (+-×÷), increment and decrement instructions. When receiving digital switch information in binary-coded decimal (BCD) format into a CPU module, use the BIN(P) instructions (for converting BCD data into binary data). Furthermore, to output data to seven-segment display unit handling binary-coded decimal (BCD) data, use the BCD(P) instructions (for converting binary data into BCD data).

Program example

• When the digital switch has 1-digit

MOV instruction can be used instead.

• When the digital switch has 2 to 4-digits

In the case of 2-digits: K2
In the case of 3-digits: K3
In the case of 4-digits: K4

Digital switch input

Output destination

Operation error

Error code (SD0/SD8067)	Description
3401H	The value of each digit of the device specified by (s) is other than 0 to 9. (The data is not binary-coded decimal data.)