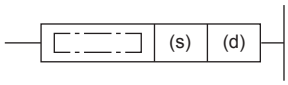
Converting binary data to BCD 8-digit data

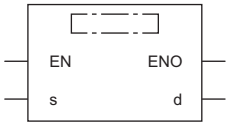
DBCD(P)

FX5S FX5UJ FX5U FX5UC

These instructions convert the binary data in the device specified by (s) to BCD data, and store the converted data in the device specified by (d).
Binary data is used in operations in CPU module. Use this instruction to display numeric values on seven-segment display unit equipped with BCD decoder.

Ladder diagram	Structured text
	ENO:=DBCD(EN,s,d); ENO:=DBCDP(EN,s,d);

FBD/LD



Setting data

■Descriptions, ranges, and data types

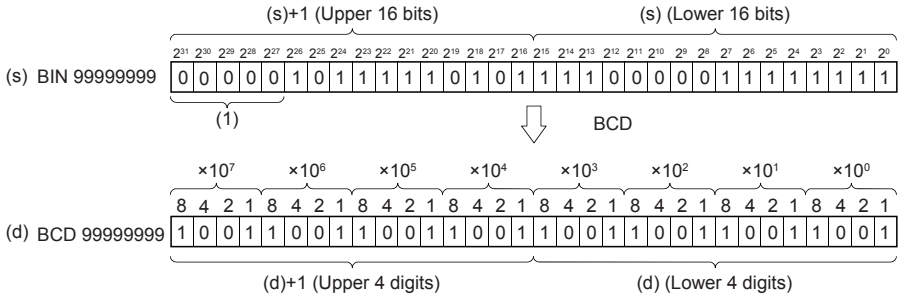
Operand	Description	Range	Data type	Data type (label)
(s)	Binary data or the head device where the binary data is stored	0 to 99999999	32-bit signed binary	ANY32
(d)	Head device for storing the BCD data	—	BCD 8-digit	ANY32
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

■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

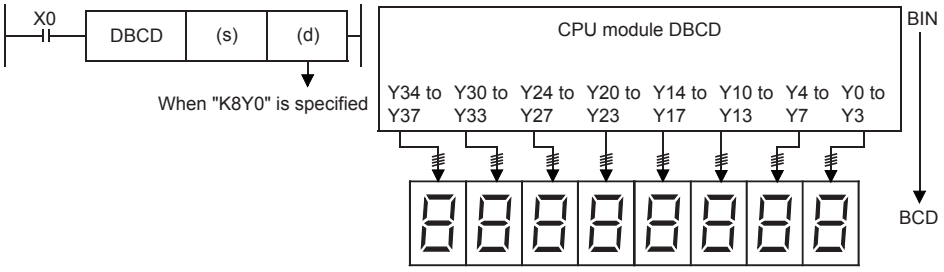
- These instructions convert 32-bit binary data (0 to 99999999) in device specified by (s) to BCD 8-digit data, and store the converted data in the device specified by (d).



(1): Set 0s to the upper 5 bits.

- Data specified by (s) can be converted if it is within the range from K0 to K99999999 BCD (decimal).

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



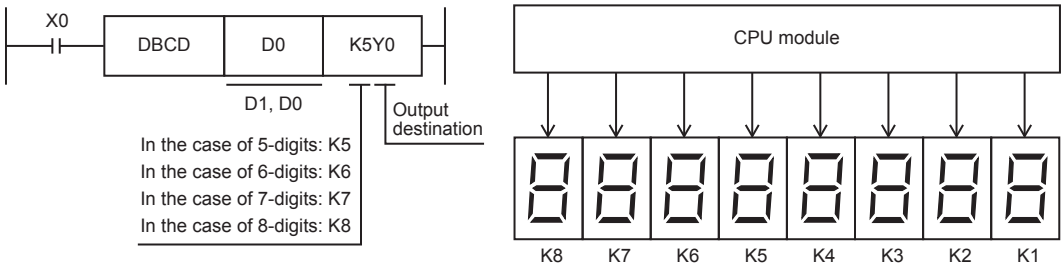
(d)+1, (d)	Number of digits	Data range
K1Y0	1-digit	0 to 9
K2Y0	2-digit	00 to 99
K3Y0	3-digit	000 to 999
K4Y0	4-digit	0000 to 9999
K5Y0	5-digit	00000 to 99999
K6Y0	6-digit	000000 to 999999
K7Y0	7-digit	0000000 to 9999999
K8Y0	8-digit	00000000 to 99999999

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 seven-segment display unit has 5 to 8-digits



Operation error

Error code (SD0/SD8067)	Description
3401H	Data in the device specified by (s) is out of the valid range (0 to 99999999).