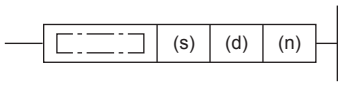
Connecting data in byte units

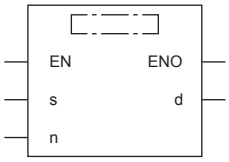
BTOW(P)

FX5S FX5UJ FX5U FX5UC

These instructions link the lower-order 8 bits of the 16-bit binary data of (n) number of bytes stored in the device numbers starting from the one specified by (s) onwards into word units, and store the linked data in the device numbers starting from the one specified by (d) onwards.

Ladder diagram	Structured text
	ENO:=BTOW(EN,s,n,d); ENO:=BTOWP(EN,s,n,d);

FBD/LD



Setting data

■Descriptions, ranges, and data types

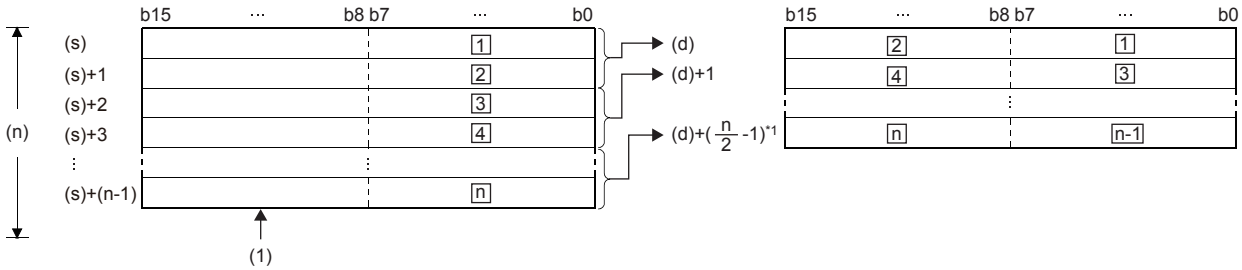
Operand	Description	Range	Data type	Data type (label)
(s)	Head device for storing the data to be linked in byte units	—	16-bit signed binary	ANY16
(d)	Head device storing data acquired by combination in byte units	—	16-bit signed binary	ANY16
(n)	Number of byte data to be linked	0 to 65535	16-bit unsigned 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)	—	○	—	—	—	—	○	—	—	—	—
(n)	○	○	○	○	—	—	○	○	—	—	—

Processing details

- These instructions link the lower-order 8 bits of the 16-bit binary data of (n) number of bytes stored in the device numbers starting from the one specified by (s) onwards into word units, and store the linked data in the device numbers starting from the one specified by (d) onwards.
- The higher-order 8 bits of the data of (n) words stored in device numbers starting from the one specified by (s) are ignored. If (n) is an odd number, 0 is stored in the higher-order 8 bits of the device for storing the data of the (n)th byte.

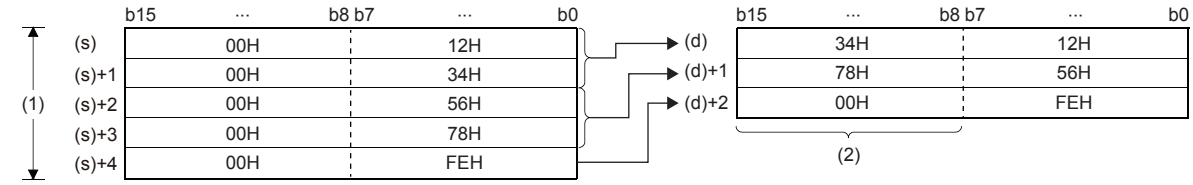


☐: ☐th byte data
(1): The upper byte data are ignored.

*1 Values after the decimal point are rounded up.

Ex.

For example, when (n) is 5, lower 8 bits of data from (s) through (s+4) is stored into (d) through (d)+2.

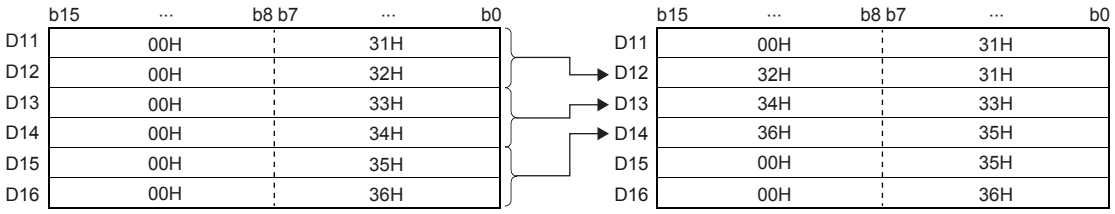


(1): When (n) is 5
(2): Filled with 00H.

- Setting the number of bytes by (n) automatically determines the byte data range specified by (s) and the device range specified by (d) for storing the linked data.
- If (n) is 0, no processing is performed.
- The higher-order 8 bits of the device specified by (s) for storing byte data are ignored, and only the lower-order 8 bits are applicable.

Ex.

To store data in lower 8 bits of D11 to D16 into D12 to D14

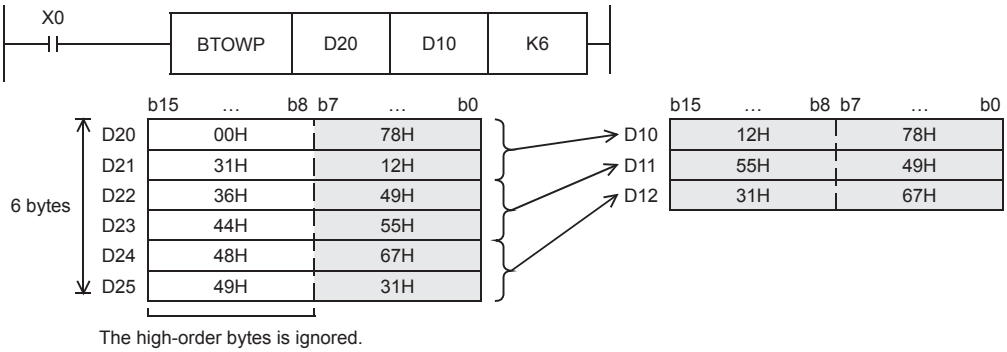


- Even if the device range of the data to be linked and the device range for storing the linked data overlap, the processing is performed normally.

Device range where the data to be linked is stored	Device range for storing the linked data
(s)+0 to (s)+(n)-1	(d) to (d)+(n/2 -1)

Program example

In the program shown below, the low-order 8-bits data stored in D20 to D25 is combined, and stored in D10 to D12 when X0 is set to ON.



Operation error

Error code (SD0/SD8067)	Description
2820H	The range of (n) points of devices from the device number specified in (s) onwards exceed the corresponding device range.
	The range of no. of bytes specified in (n) from the device number specified in (d) onwards exceed the corresponding device range.