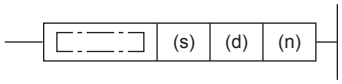
Extracting character string data from the right

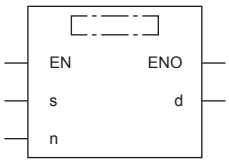
RIGHT(P)

FX5S FX5UJ FX5U FX5UC

These instructions extract "n" characters of the character string data stored in the device specified by (s) and later from the right end (from the end), and store the extracted characters in the device specified by (d) and later.

Ladder diagram	Structured text*1
	ENO:=RIGHTP(EN,s,n,d);

FBD/LD*1



*1 The RIGHT instruction is not supported by the ST language and the FBD/LD language. Use RIGHT of the standard function.
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Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s)	Character string or head device number storing a character string	—	Character string	ANYSTRING_SINGLE
(d)	Head device number for storing "n" characters extracted from the right of the device specified by (s)	—	Character string	ANYSTRING_SINGLE
(n)	Number of characters to be extracted	1 to 16383	16-bit signed binary	ANY16
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

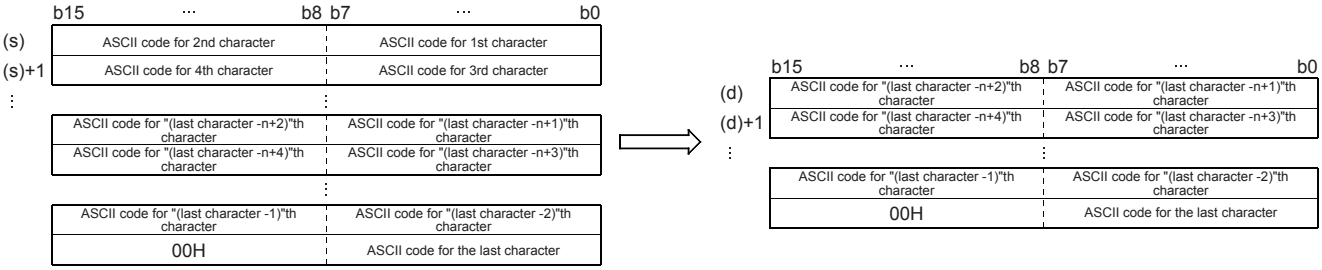
■Applicable devices

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)	—	○*1	—	—	—	—	○	—	—	○	—
(d)	—	○*1	—	—	—	—	○	—	—	—	—
(n)	○	○	○	○	—	—	○	○	—	—	—

*1 T, ST, and C cannot be used.

Processing details

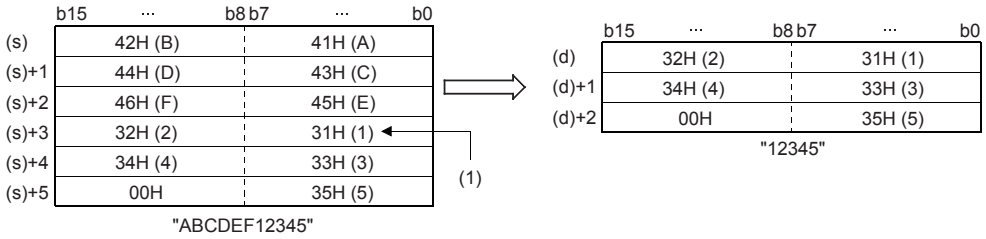
- These instructions extract "n" characters of the character string data stored in the device specified by (s) and later from the right end (from the end), and store the extracted characters in the device specified by (d) and later.



- A character string stored in (s) indicates data stored in devices from the specified device until "00H" is first detected in units of 1 byte.

Ex.

When 5 is specified in (n)



(1): ASCII code for 5th character

- A NULL code (00H), which indicates an end of a character string, is automatically added at the end of the character string data.
- When the number of extracted characters is odd, "00H" is stored in the upper byte of a device storing the last character. When the number of extracted characters is even, "0000H" is stored in the device after the last character.
- When the number of characters specified by (n) is 0, a NULL code (00H) is stored in (d).

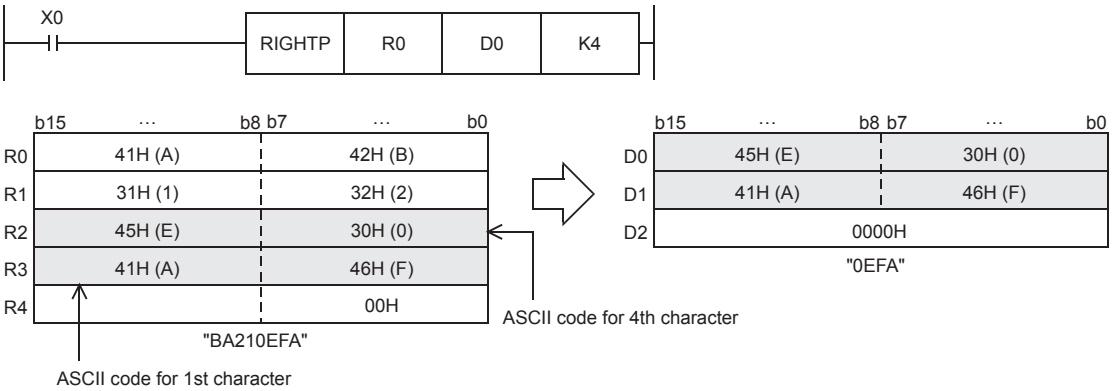
Precautions

When handling character codes other than ASCII codes, note the following points:

- The number of characters is handled in byte units (8 bits). Accordingly, in the case of character codes in which 2 bytes express 1 character such as shift JIS codes, 1 character is detected as "2".
- When extracting characters from a character string including character codes in which 2 bytes express 1 character such as shift JIS codes, consider the number of characters to be extracted in units of character codes for 1 character. Note that the expected character code is not retrieved if only 1 byte is extracted out of a 2-byte character code.

Program example

In the program example shown below, 4 characters are extracted from the right end of the character string data stored in R0 and later, and stored to D0 and later when X0 turns ON.



Operation error

Error code (SD0/SD8067)	Description
2820H	In the corresponding device range of the device specified by (s) and later, "00H" does not exist.
3405H	(n) is not within the following range 0 to 16383
	The character string specified by (s) has more than 16383 characters.
	"n" exceeds the number of characters specified by (s)
3406H	The (n) points of data in the device starting from the one specified by (d) exceed the corresponding device range.