Converting Unicode character string to Shift JIS character string

WS2SJIS(P)

`FX5S` `FX5UJ` `FX5U` `FX5UC`

These instructions convert a Unicode character string to a Shift JIS character string.

Ladder	ST
	ENO:=WS2SJIS(EN,s,d); ENO:=WS2SJISP(EN,s,d);

FBD/LD

Setting data

■Description, range, data type

Operand	Description	Range	Data type	Data type (label)
(s)	Unicode string (up to 255 characters) to be converted or start device containing the Unicode string	—	Unicode string	ANYSTRING_DOUBLE
(d)	Start device for storing the converted Shift JIS character string	—	String	ANYSTRING_SINGLE
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

■Applicable devices
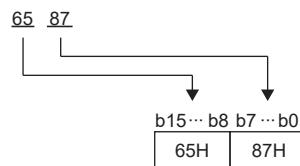
Operand	Bit	Word			Double word		Indirect specification	Constant			Others
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	$	
(s)	—	○	—	—	—	—	○	—	—	○	—
(d)	—	○	—	—	—	—	○	—	—	—	—

Processing details

- These instruction convert the Unicode character string in the device specified by (s) to the shift JIS character string, and stores the converted data in the device specified by (d).
- Specify the Unicode string in (s) in little endian.
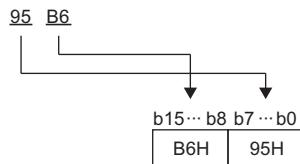
Ex.
A Unicode string "6587H" is specified.
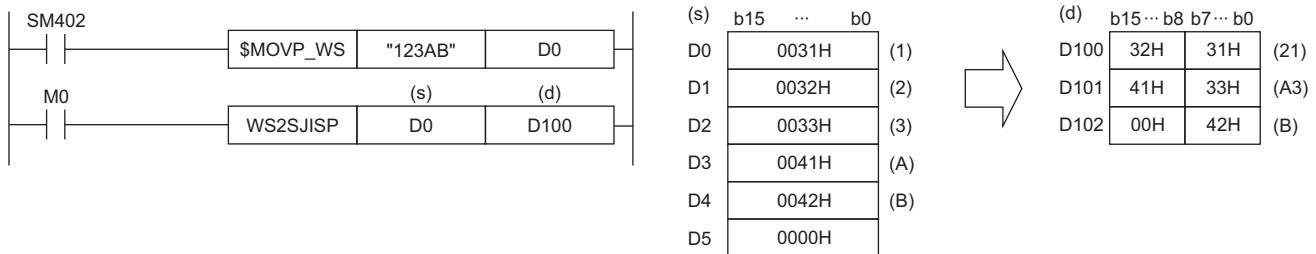
• The shift JIS string in (d) is stored in big endian.

Ex.
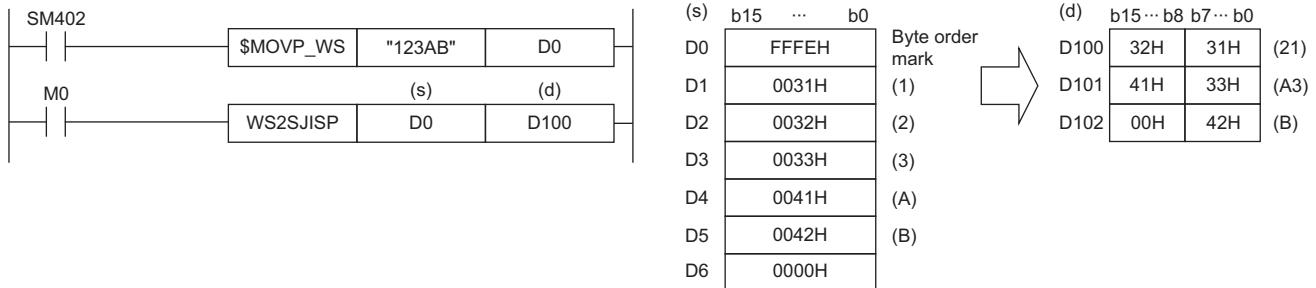
A shift JIS string "95B6H" is specified with "B695H".

```
95  B6
 │   │
 │   └────────┐
 └──────┐     │
        ▼     ▼
   b15···b8 b7···b0
   ┌──────┬──────┐
   │ B6H  │ 95H  │
   └──────┴──────┘
```

• When a byte order mark is not used, conversion from Unicode to shift JIS occurs as follows.

```
  SM402
───┤├──────────┬─────────────┬──────────┬─────────┐
                │  $MOVP_WS   │ "123AB"  │   D0    │
  M0            │             │   (s)    │   (d)   │
───┤├──────────┤  WS2SJISP   │    D0    │  D100   │
                └─────────────┴──────────┴─────────┘
```

(s)	b15 ··· b0	
D0	0031H	(1)
D1	0032H	(2)
D2	0033H	(3)
D3	0041H	(A)
D4	0042H	(B)
D5	0000H	

(d)	b15···b8	b7···b0	
D100	32H	31H	(21)
D101	41H	33H	(A3)
D102	00H	42H	(B)
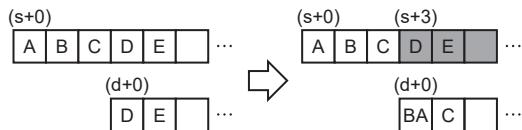
• When a byte order mark (FEFFH) is added, conversion from Unicode to shift JIS occurs as follows.

```
  SM402
───┤├──────────┬─────────────┬─────────────┬──────────┐
                │  $MOVP_WS   │  "123AB"    │   D0     │
  M0            │             │    (s)      │   (d)    │
───┤├──────────┤  WS2SJISP   │    D0       │  D100    │
                └─────────────┴─────────────┴──────────┘
```

(s)	b15 ··· b0	
D0	FFFEH	Byte order mark
D1	0031H	(1)
D2	0032H	(2)
D3	0033H	(3)
D4	0041H	(A)
D5	0042H	(B)
D6	0000H	

| (d)	b15···b8	b7···b0	
D100	32H	31H	(21)
D101	41H	33H	(A3)
D102	00H	42H	(B)

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Precautions

- If the Unicode string specified in (s) contains a character code that cannot be converted, the string to the character causing the error is written to the device No. specified in (d).
- 32-bit Unicode strings cannot be converted to shift JIS.
- If the device ranges specified in (s) and (d) overlap, the overlap may be detected in advance. The operation in each case of overlap of the device ranges is shown below.

[When the overlap is detected in advance]
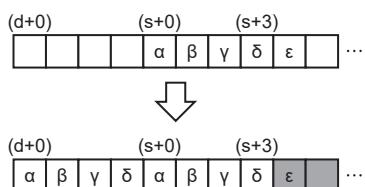
If the overlap of the device ranges is detected in advance, the string to the overlapped point is converted and written to (d).
Since the overlap of the device ranges in (s+3) is revealed in advance, the string in (s+0) to (s+2) is converted and written to (d+0) and (d+1).
An overlap error (2821H) occurs.
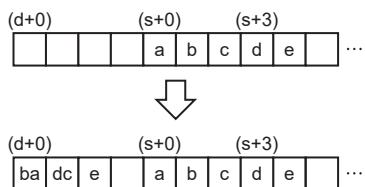
[When the overlap cannot be detected in advance (error completion)]

Since the device ranges overlap when the string in (s+3) is converted, the next destination to store is not found.
An overlap error (2821H) occurs.

[When the overlap cannot be detected in advance (normal completion)]

As the result of string conversion, the device ranges do not overlap, and the program terminates normally.

Operation error

Error code (SD0/SD8067)	Description
2820H	0000H does not exist between setting areas in the device/label memory after the device No. specified in (s).
2821H	The ranges of data in the devices specified by (s) and (d) are overlapping.
3401H	Byte order mark FEFFH (big endian) is added to the character string in the device specified by (s).
	The range of data in the device specified by (s) includes a character code that cannot be converted.
3405H	The character string in the device specified by (s) exceeds 512 characters.[1]
3406H	All converted shift JIS (ASCII) strings cannot be stored to the number of points to the last No. in each setting area of the relevant device/label memory after the device No. specified in (d).

[1] A two-byte character such as a kanji character represented in shift JIS code should be counted 2.