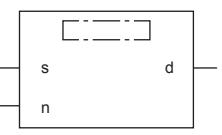
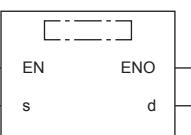


## 23.3 n-bit Left Rotation

### ROL(\_E)

**FX5S    FX5UJ    FX5U    FX5UC**

These functions rotate an input value leftward by (n) bits and output the result.

Ladder diagram, FBD/LD	Structured text
[Without EN/ENO]  [With EN/ENO] 	[Without EN/ENO] d:=ROL(s,n); [With EN/ENO] d:=ROL_E(EN,ENO,s,n);

### Setting data

#### ■ Descriptions, types, and data types

Argument	Description	Type	Data type
EN	Execution condition (TRUE: Execution, FALSE: Stop)	Input variable	BOOL
s(IN)	Input	Input variable	ANY_BIT
n(N)	Number of shift bits	Input variable	ANY_BIT
ENO	Output status (TRUE: Normal, FALSE: Abnormal)	Output variable	BOOL
d(ROL(_E))	Output	Output variable	ANY_BIT

### Processing details

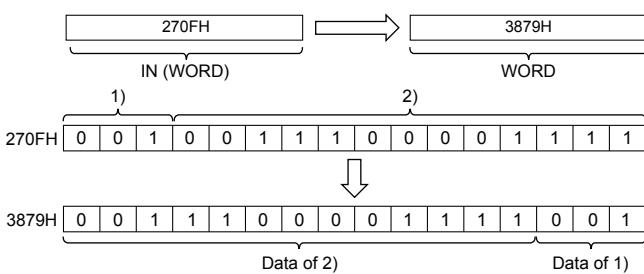
#### ■ Operation processing

- These functions rotate the 16-bit or 32-bit data (WORD or DWORD type) input to (s) left by (n) bits and output the result in the same data type as (s) from (d).
- The number input in (n) is used as the number of left-rotation bits.



#### Ex.

When the data type of (s) is 16-bit data (WORD) and 3 is input in (n) (The bits are rotated left by 3 bits.)



- The input data to (s) is 16-bit data/32-bit data (WORD or DWORD type).
- A value input to (n) (Number of shift bits) is the INT type data value and within the following range.

When the data of (s) is 16-bit data (WORD)	When the data of (s) is 32-bit data (DWORD)
A value in (n) is within 0 to 15. The lower 4-bit data of the value in (n) is used. [Example] When the input value is 6: 6 When the input value is 22: 6	A value in (n) is within 0 to 31. The lower 5-bit data of the value in (n) is used. [Example] When the input value is 6: 6 When the input value is 22: 22

## ■Operation result

### 1. Function without EN/ENO

The operation processing is executed. The operation output value is output from (d).

### 2. Function with EN/ENO

The following table lists the execution conditions and operation results.

Execution condition	Operation result	
EN	ENO	(d)
TRUE (Executes operation)	TRUE	Operation output value
FALSE (Stops operation)	FALSE <sup>*1</sup>	Indefinite value

\*1 When FALSE is output from ENO, data output from (d) is undefined. In that case, modify a program so that the data output from (d) is not used.

## Operation error

There is no operation error.