21.2 Square Root

SQRT(_E)
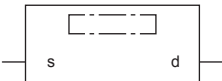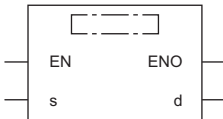
| FX5S | FX5UJ | FX5U | FX5UC |

These functions output the square root of an input value.

Ladder diagram, FBD/LD		Structured text

[Without EN/ENO] s d	[With EN/ENO] EN ENO s d	[Without EN/ENO]
		d:=SQRT(s);
		[With EN/ENO]
		d:=SQRT_E(EN,ENO,s);

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	REAL
ENO	Output status (TRUE: Normal, FALSE: Abnormal)	Output variable	BOOL
d(SQRT(_E))	Output	Output variable	REAL

Processing details

■Operation processing

- These functions output the square root of the REAL type data input to (s) from (d).
- These functions are expressed as follows when the input value is "A" and the output operation result is "B".

$$B=\sqrt{A}$$

- A value input to (s) is the REAL type data value and within the positive value range.

■Operation result

1. Function without EN/ENO

The following table lists the operation results.

Operation result	(d)
No operation error occurred	Operation output value
An operation error occurred	Indefinite value

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 error did not occur)	Operation output value
FALSE (Stops operation)	FALSE[1]	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

Error code (SD0/SD8067)	Description
3405H	A negative value is input.