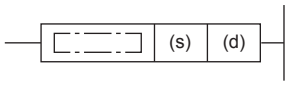
Calculating the square root of 32-bit data

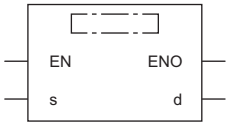
DSQRT(P)

FX5S FX5UJ FX5U FX5UC

These instructions calculate the square root of binary 32-bit data specified by (s1), and store the operation result in (d).

Ladder diagram	Structured text
	ENO:=DSQRT(EN,s,d); ENO:=DSQRTP(EN,s,d);

FBD/LD



Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s)	Device where the data whose square root is operated is calculated	—	32-bit unsigned binary	ANY32
(d)	Device for storing the calculated square root	—	32-bit unsigned binary	ANY32
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 instructions calculate the square root of binary 32-bit data specified by (s1), and store the operation result in (d).

$\sqrt{(s)+1, (s)} \rightarrow (d)+1, (d)$

Precautions

- The obtained square root is an integer because the decimal point is ignored. When the calculated decimal value is ignored, SM8021 (borrow flag) turns on.
- When the operation result is true 0, SM8020 (zero flag) turns on.