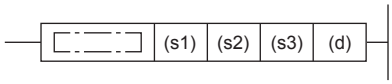
Single-precision real number data band comparison

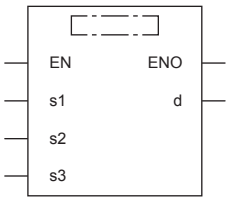
DEZCP(P)

FX5S FX5UJ FX5U FX5UC

These instructions compare the comparison range of two points, upper and lower, with the binary floating point, and output the result to three consecutive bit devices in accordance with the larger, smaller, and band.

Ladder diagram	Structured text
	ENO:=DEZCP (EN, s1, s2, s3, d); ENO:=DEZCPP(EN, s1, s2, s3, d);

FBD/LD



Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s1)	Comparison data or the number of the device where the comparison data is stored	0, $2^{-126} \leq \lvert(s1)\rvert < 2^{128}$	Single-precision real number	ANYREAL_32
(s2)	Comparison data or the number of the device where the comparison data is stored	0, $2^{-126} \leq \lvert(s2)\rvert < 2^{128}$	Single-precision real number	ANYREAL_32
(s3)	Comparison data or the number of the device where the comparison data is stored	0, $2^{-126} \leq \lvert(s3)\rvert < 2^{128}$	Single-precision real number	ANYREAL_32
(d)	Start bit device number to which comparison result is output (Three devices are occupied).	—	Bit	ANYBIT_ARRAY (Number of elements: 3)
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

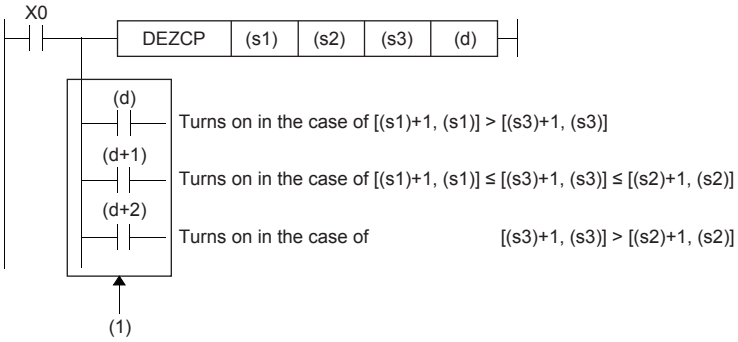
■Applicable devices

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	$	
(s1)	—	○	○	—	○	—	○	○	○	—	—
(s2)	—	○	○	—	○	—	○	○	○	—	—
(s3)	—	○	○	—	○	—	○	○	○	—	—
(d)	○	○*1	—	—	—	—	—	—	—	—	—

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

Processing details

- These instructions compare the comparison values (s1) and (s2) with the comparison source (s3) as floating point data, and one of the bits among (d), (d)+1, and (d)+2 turns on according to the result (smaller, within the range or larger).



(1): Even if the command input X0 turns off before the DEZCP instruction is fully executed, (d) to (d)+2 hold the status.

- When the constant (K or H) is specified the device specified by (s1), (s2) and (s3), these instructions convert the binary value into single-precision real number automatically.

Precautions

- Three devices ((d), (d)+1, and (d)+2) specified by (d) are occupied. Note that these devices are not used for any other purpose.
- The size relationship of the comparison data should be [(s1)+1, (s1)] ≤ [(s2)+1, (s2)]. If the relationship is [(s1)+1, (s1)] > [(s2)+1, (s2)], the value of [(s2)+1, (s2)] is regarded as the same as that of [(s1)+1, (s1)], and is compared.

Operation error

Error code (SD0/SD8067)	Description
2820H	The device range specified by (d) exceeds the corresponding device range.
3402H	The specified device value is denormalized number, NaN (not a number), or ±∞.