

Converting decimal floating point to binary floating point

DEBIN(P)

FX5S | **FX5UJ** | **FX5U** | **FX5UC**

These instructions convert the decimal floating point specified by (s) to the binary floating point, and store the converted data in the device specified by (d).

Ladder diagram	Structured text
	<pre>ENO:=DEBIN(EN,s,d); ENO:=DEBINP(EN,s,d);</pre>



Setting data

■ Descriptions, ranges, and data types

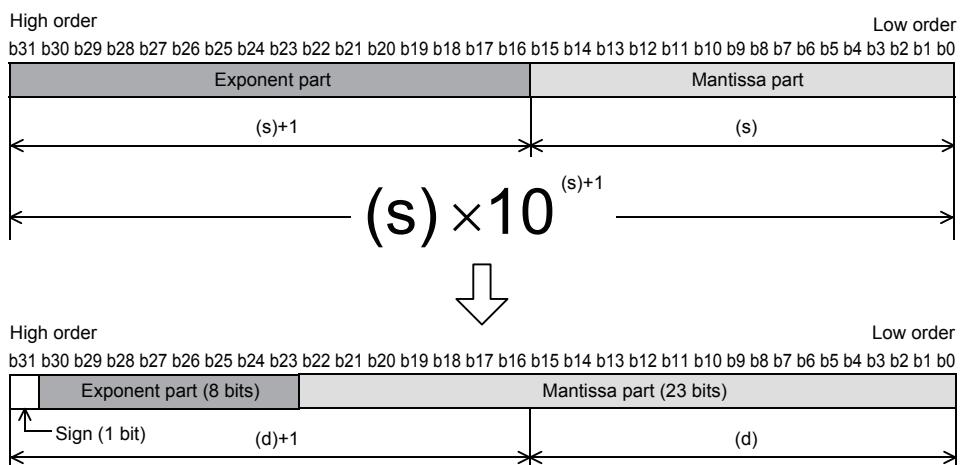
Operand	Description	Range	Data type	Data type (label)
(s)	Head device number storing decimal floating-point data	—	Real number	ANY32
(d)	Device number storing converted binary floating-point data	—	Single-precision real number	ANYREAL_32
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

■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 convert the decimal floating point specified by (s) to the binary floating point, and store the converted data in the device specified by (d).



- The table below shows the related devices.

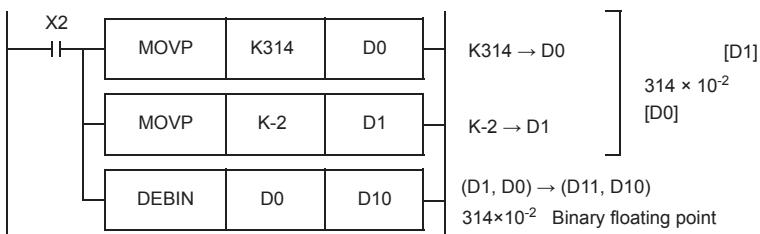
Device	Name	Description	
		Condition	Operation
SM700	Carry	The absolute value of the operation result $\geq 2^{128}$	The value of (d) is the maximum value (2^{128}) of 32-bit real numbers and the carry flag SM700 turns on.
SM8020	Zero	The operation result is true "0". (The mantissa part is "0").	The zero flag SM8020 turns on.
SM8021	Borrow	The absolute value of the operation result $< 2^{-126}$	The value of (d) is the minimum value (2^{-126}) of 32-bit real numbers and the borrow flag SM8021 turns on.
SM8022	Carry	The absolute value of the operation result $\geq 2^{128}$	The value of (d) is the maximum value (2^{128}) of 32-bit real numbers and the carry flag SM8022 turns on.

Program example

In the program shown below, a numeric value containing the decimal point is converted into binary floating point.

Converting "3.14" into binary floating point

$3.14 = 314 \times 10^{-2}$ (decimal floating point)



Operation error

There is no operation error.