

# 8.15 Special Counter Instruction

## Signed 32-bit bi-directional counters

### UDCNTF

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

This instruction increments the current value of the counter specified by (d) by 1 when the operation result up to UDCNTF instruction changes from OFF to ON, and when the counter reaches the end of its count, NO contact becomes turns ON and NC contact becomes turns OFF. When the long counter specified by (d) is a high-speed counter, the instruction operates to start and stop the high-speed counter.

The high-speed pulse input/output module is not supported.

For details on the high-speed counter, refer to [MELSEC iQ-F FX5 User's Manual \(Application\)](#).

Ladder diagram	Structured text
	ENO:= UDCNTF(EN, s, d);
FBD/LD	

### Setting data

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

Operand	Description	Range	Data type	Data type (label)
(d)	Long counter number	—	Device name	ANY32
(s)	Long counter set value	-2147483648 to 2147483647	32-bit signed binary	ANY32_S <sup>*1</sup>
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

<sup>\*1</sup> Digit specified bit type label cannot be used.


#### ■Applicable devices

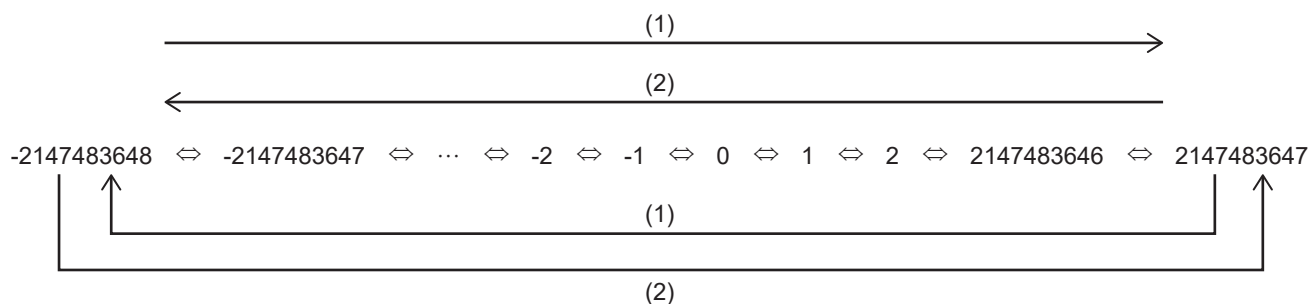
Operand	Bit	Word			Double word		Indirect specification	Constant			Others
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	\$	
(d)	—	—	—	—	○	—	—	—	—	—	—
(s)	—	○ <sup>*1</sup>	○	—	—	—	—	○ <sup>*2</sup>	—	—	—

<sup>\*1</sup> T, ST, and C cannot be used.

<sup>\*2</sup> Only decimal constant (K) can be used.

## Processing details

- This instruction increments the current value of the counter specified by (d) by 1 when the operation result up to UDCNTF instruction changes from OFF to ON, and when the counter reaches the end of its count, NO contact becomes turns ON and NC contact becomes turns OFF.
- When the long counter specified by (d) is a high-speed counter, the instruction operates to start and stop the high-speed counter, and the current counter value is updated by turning ON/OFF an external input instead of the drive contact. Counting up or down can be switched by whether the supported special device (SM4580 to SM4595) is on or off.
- When the long counter specified by (d) is a normal counter, the counting direction of LC0 to LC34 can be switched by turning on or off the corresponding special device (SM8200 to SM8234). For LC35 or later, only up counting is supported.
- During up-counting, the output contact turns ON when the current value changes from a value less than the set value to a value not less than the set value.
- During down-counting, the output contact turns OFF when the current value changes from a value not less than the set value to a value equivalent to the "set value -1" or less.
- Counting is continued also when the drive contact changes from OFF to ON after the output contact changes. (Only when specify other than a high-speed counter for (d))
- When unsigned (0 to 4294967295) is assigned to the LC, the OUT LC instruction is used. For the OUT LC instruction, refer to  Page 137 OUT LC.
- The current value operates as a ring counter.



(1): Up counting  
(2): Down counting

## Precautions

- The last number of a word device cannot be input as the long counter set value.
- Indirect specification cannot be input as the long counter set value.
- When the set value or more is written to the current value of the up counter by the DMOV instruction, the counter is counted but the output contact does not turn on.
- When the value less than the set value is written to the current value of the down counter by the DMOV instruction, the counter is counted but the output contact does not turn off.
- When the long counter is cleared by the RST instruction, the current value will be cleared, and the contact will be turned off. After the counter is cleared, the counter will not count under the UDCNTF instruction until the RST instruction is executed in the contact OFF status.

## Operation error

There is no operation error.