

31.2 Down Counter

CTD(_E)

FX5S FX5UJ FX5U FX5UC

These function blocks count down the number of times of rising of a signal.

Ladder diagram, FBD/LD		Structured text
[Without EN/ENO]	[With EN/ENO]	[Without EN/ENO] CTD_1(CD:=s1,LD:=s2,PV:=n,Q:=d1,CV:=d2); [With EN/ENO] CTD_E_1(EN:=EN, ENO:=ENO CD:=s1,LD:=s2,PV:=n,Q:=d1,CV:=d2);

Setting data

■Descriptions, types, and data types

Argument	Description	Type	Data type
EN	Execution condition (TRUE: Execution, FALSE: Stop)	Input variable	BOOL
s1(CD)	Count signal input	Input variable	BOOL
s2(LD)	Count value set	Input variable	BOOL
n(PV)	Count start value	Input variable	INT
ENO	Output status (TRUE: Normal, FALSE: Abnormal)	Output variable	BOOL
d1(Q)	Count end	Output variable	BOOL
d2(CV)	Count value	Output variable	INT

Processing details

■Operation processing

1. Count down

- These function blocks count down (subtract "-1" from) the value of (d2) when (s1) turns ON from OFF.
- When the value of (d2) is 0, (d1) turns ON and the function blocks stop counting down.
- Set the count start value for (n). When (s2) is turned ON, (d1) turns OFF and (n) is set for (d2).

2. Count start value

The effective setting range of (n) is from 0 to 32767.

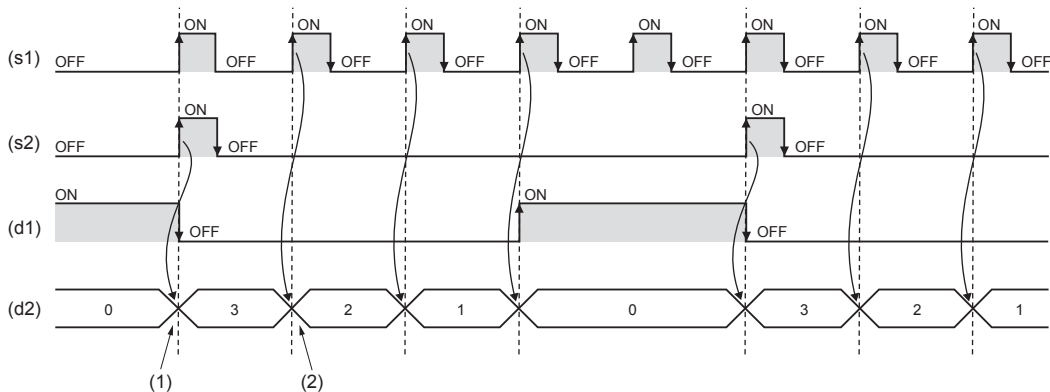
■ Operation result

1. Function block without EN/ENO

The operation processing is executed. The operation output value is output from (d1) and (d2).

• Timing chart

When 3 is specified in n



(1): When (s2) is on, (d2) is initialized.

(2): On the rising edge of (s1), (d2) counts down.

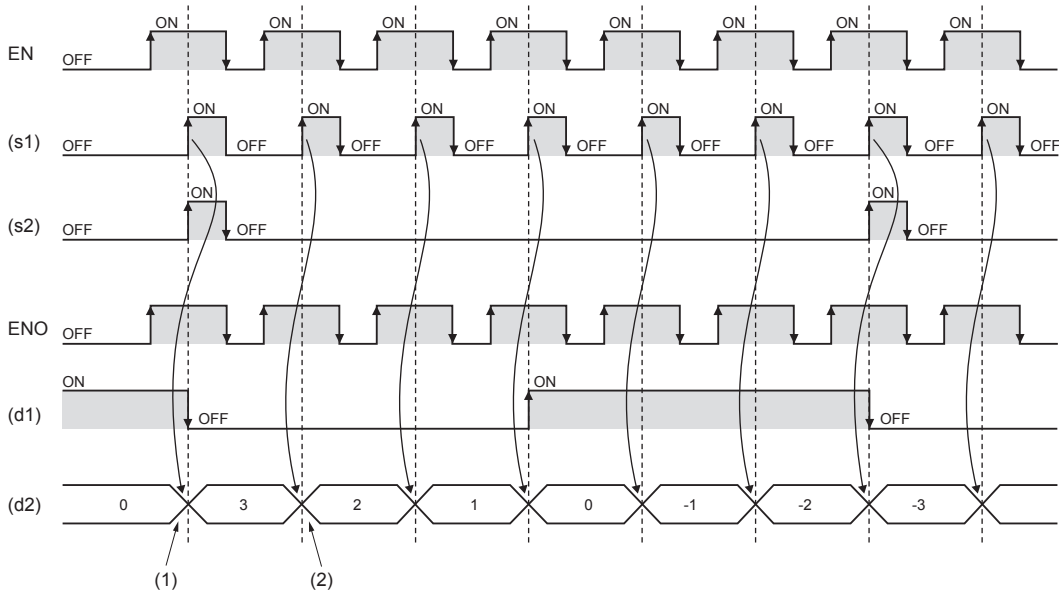
2. Function block with EN/ENO

The following table lists the execution conditions and operation results.

Execution condition	Operation result	
EN	ENO	(d1), (d2)
TRUE (Executes operation)	TRUE	Operation output value
FALSE (Stops operation)	FALSE	Previous output value

• Timing chart

When 3 is specified in n



(1): When EN and (s2) are on, (d2) is initialized.

(2): When EN is on at the rising edge of (s1), (d2) counts down.

Operation error

There is no operation error.