Programmable Logic Controllers Course

Counters

CNT instruction
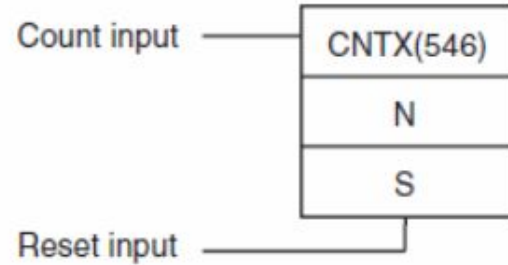
BCD
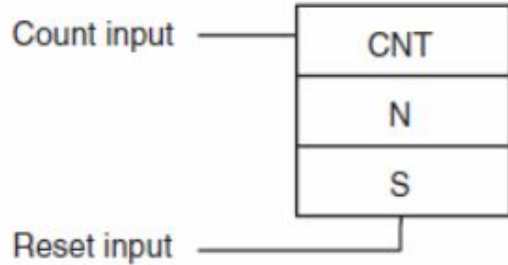
Binary

Operands

N: Counter Number
The counter number must be between 0000 and 4095 (decimal).

S: Set Value

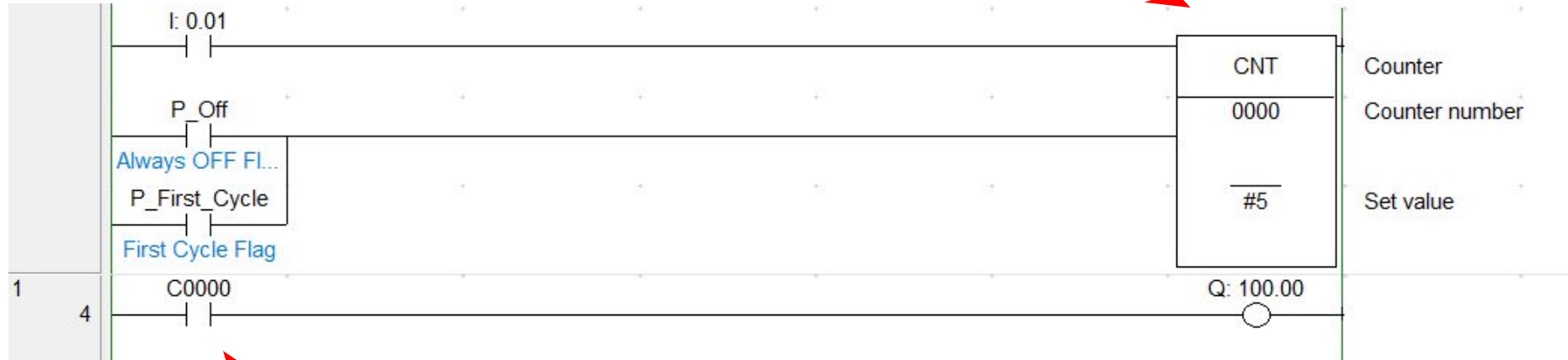| Data	Range
BCD	#0000 to #9999
Binary	&0 to &65535 (decimal) #0000 to #FFFF (hex)

Description
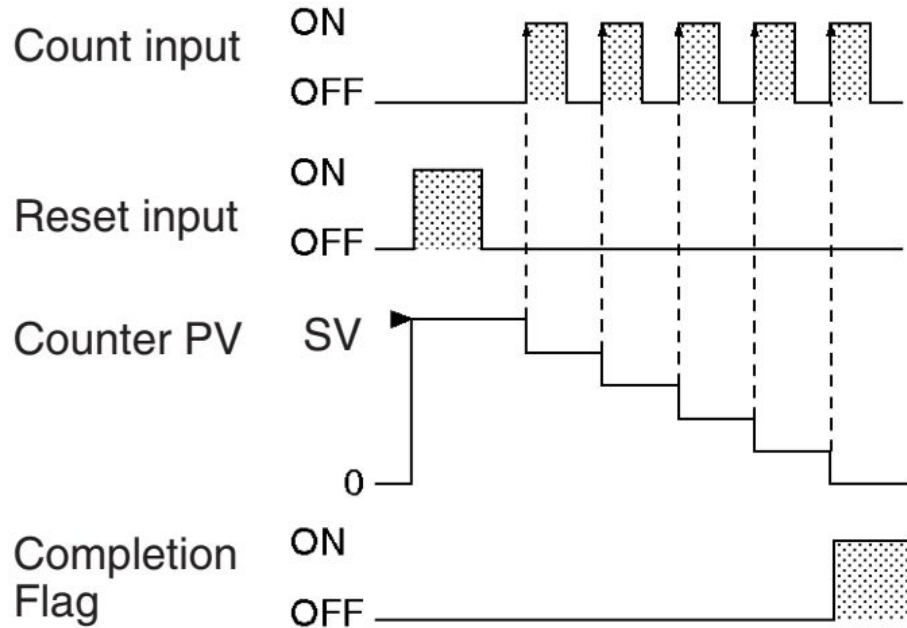
Completion Flag - **C** bit + counter number
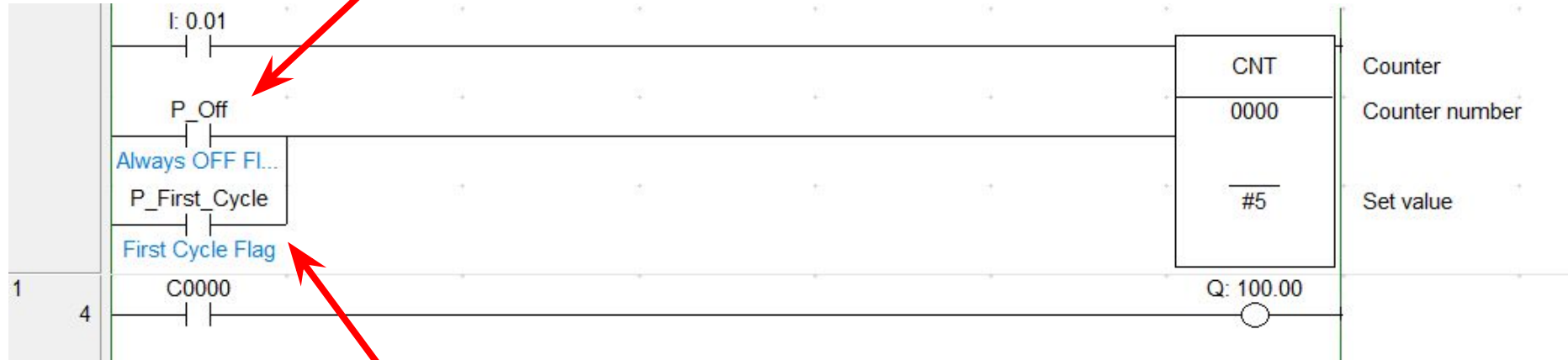
eg. C1 for CNT1; C102 for CNT102

CNT example 1

CNT is an instruction

I: 0.01		CNT	Counter
		0000	Counter number
P_Off			
Always OFF Fl...			
P_First_Cycle		#5	Set value
First Cycle Flag			
C0000			Q: 100.00

Completion flag for **CNT0** is **C0**

CNT example 1

When reset is not required

First cycle counter preset

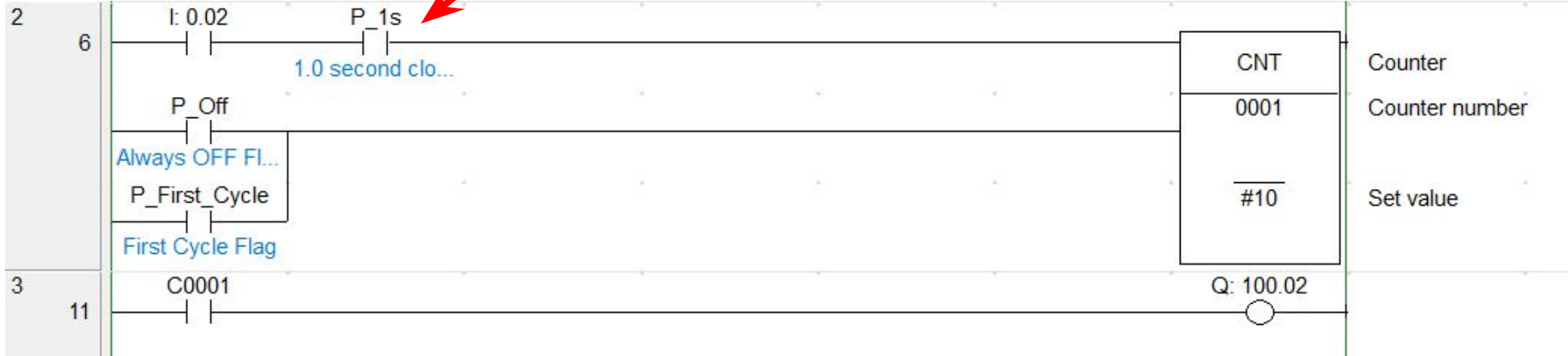| I: 0.01	CNT	Counter
	0000	Counter number
P_Off		
Always OFF Fl...		
P_First_Cycle	#5	Set value
First Cycle Flag		
C0000	Q: 100.00	

CNT example 1

End of counting -> CNT1 = 0
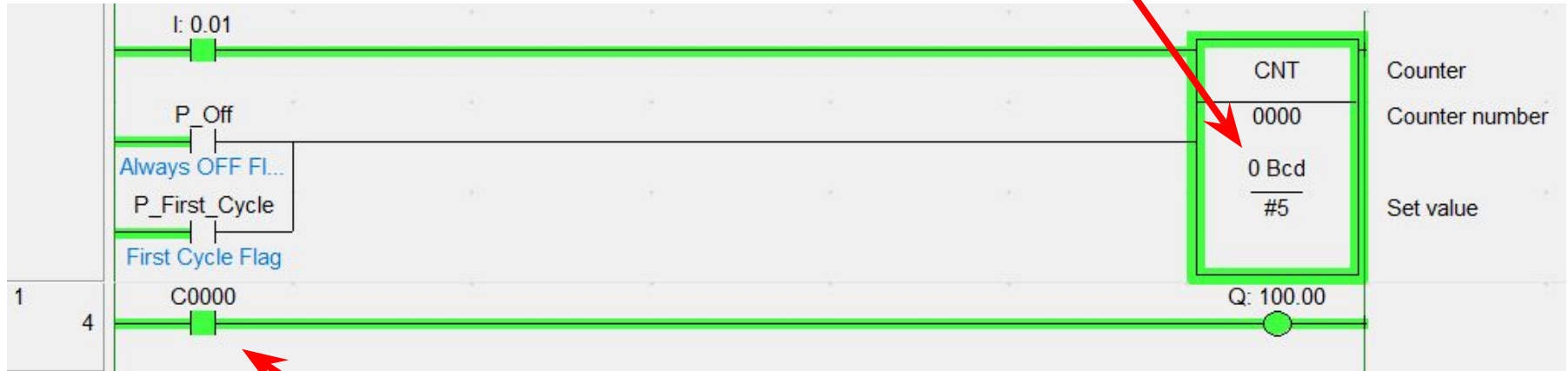
End of counting -> C0 = 1

CNT example 2 - timer

1.0s clock pulse bit

Reversible counter

BCD

Increment input —— CNTR(012)

N	**N**: Counter number
S	**S**: Set value

Decrement input

Reset input

Binary

Increment input —— CNTRX(548)

N	**N**: Counter number
S	**S**: Set value

Decrement input
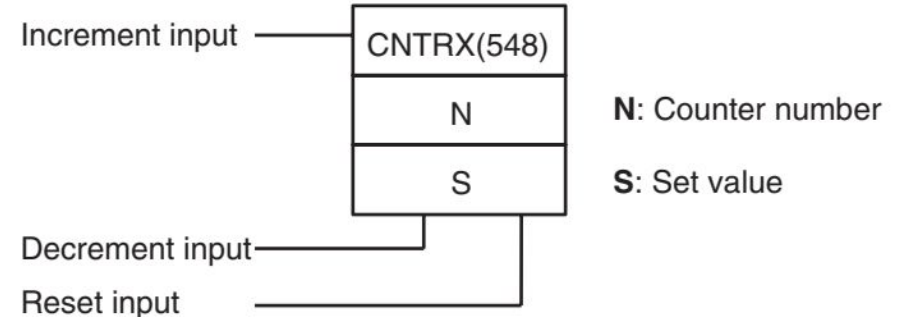
Reset input

Operands

N: Counter Number

The counter number must be between 0000 and 4095 (decimal).

S: Set Value

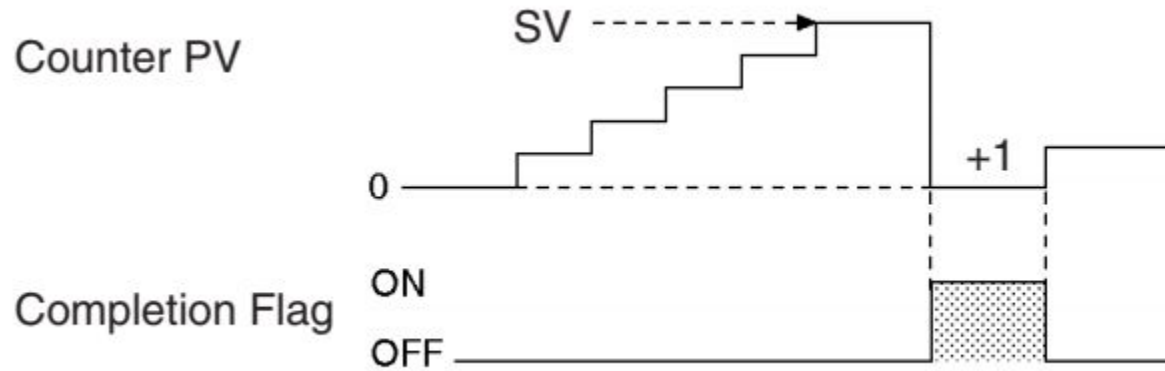| Data	Range
BCD	#0000 to #9999
Binary	&0 to &65535 (decimal) #0000 to #FFFF (hex)

Reversible counter
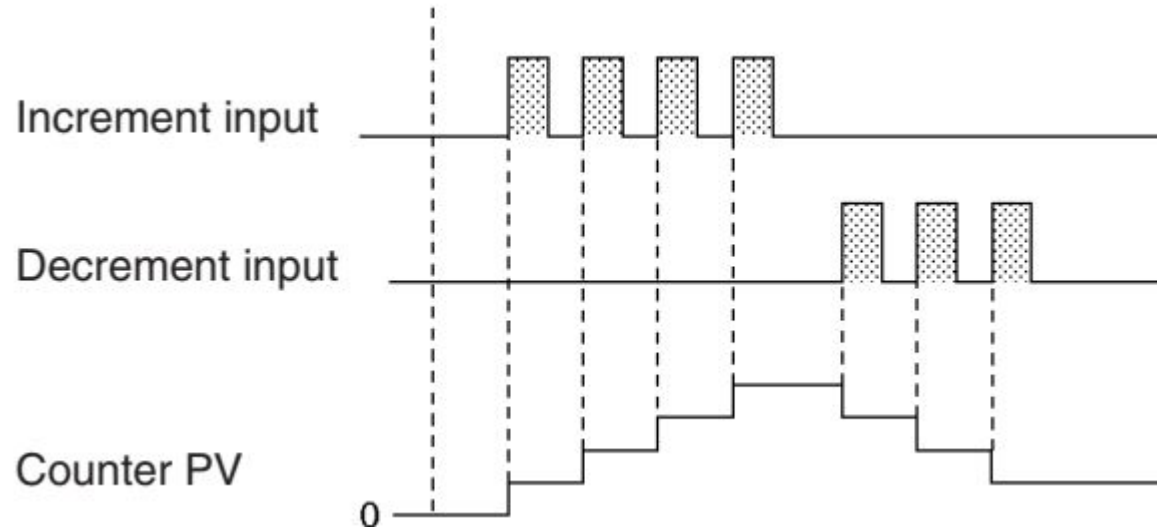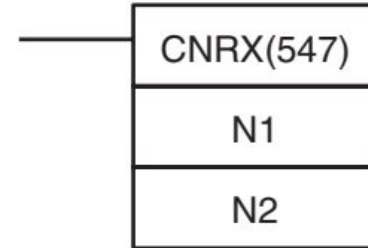
Reversible counter

Example 3
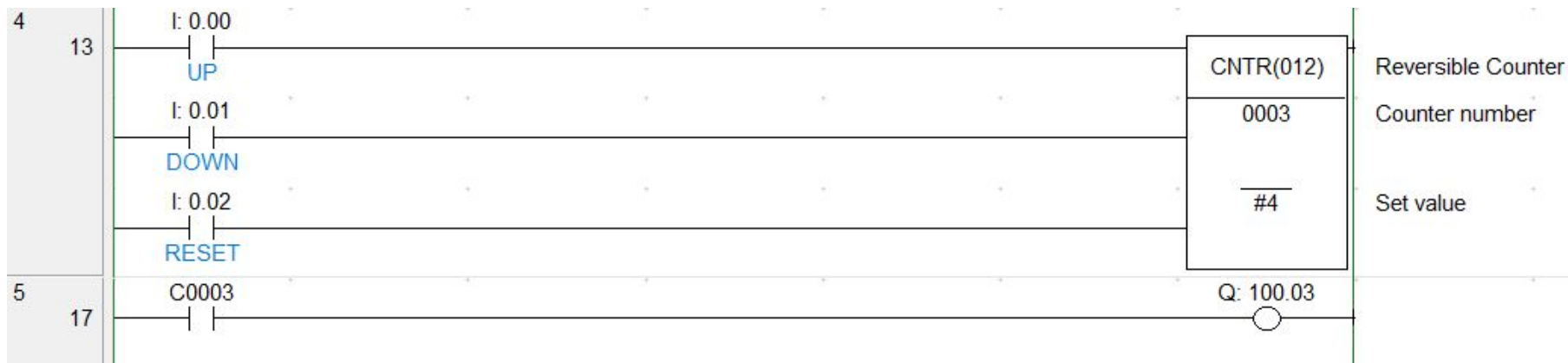
Counter range reset

BCD

CNR(545)
N1
N2
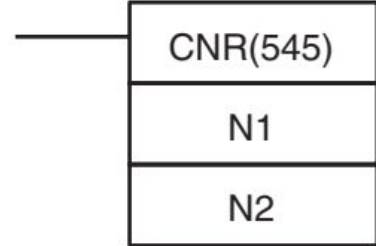
N_1: First number in range

N_2: Last number in range

Binary

CNRX(547)
N1
N2

N_1: First number in range

N_2: Last number in range

Operands

N_1: First Number in Range

N_1 must be a timer number between T0000 and T4095 or a counter number between C0000 and C4095.

N_2: Last Number in Range

N_2 must be a timer number between T0000 and T4095 or a counter number between C0000 and C4095.

Note N_1 and N_2 must be in the same data area, i.e., N_1 and N_2 must be timer numbers or counter numbers.