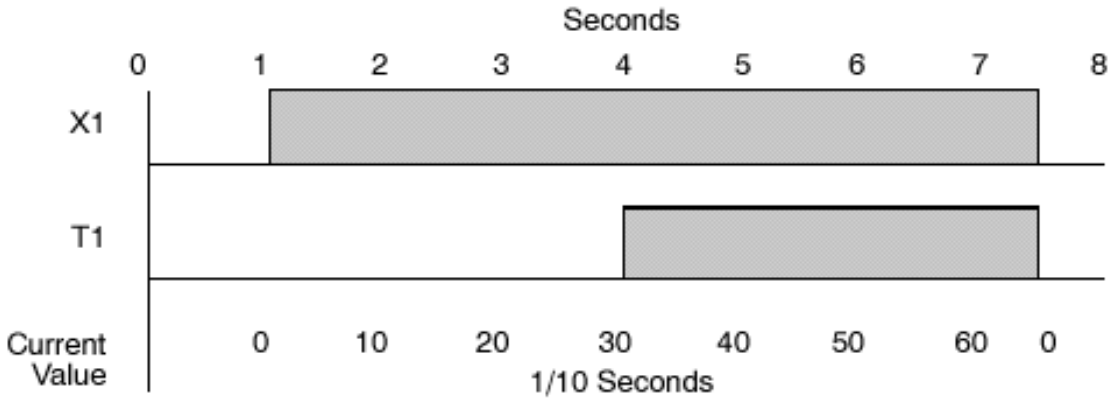
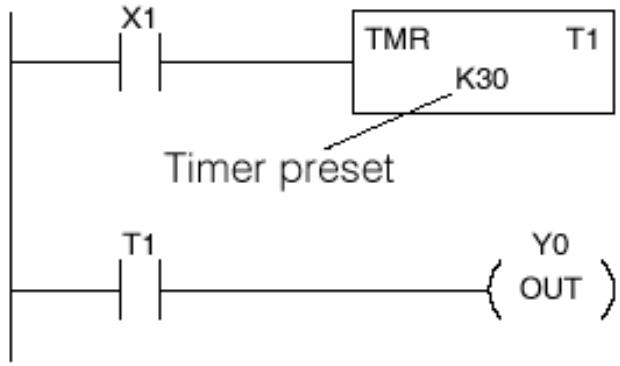
Timers - TMR and TMRF

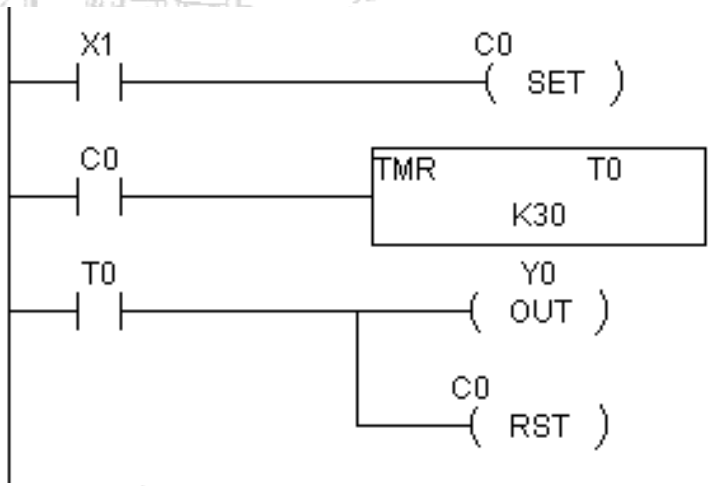




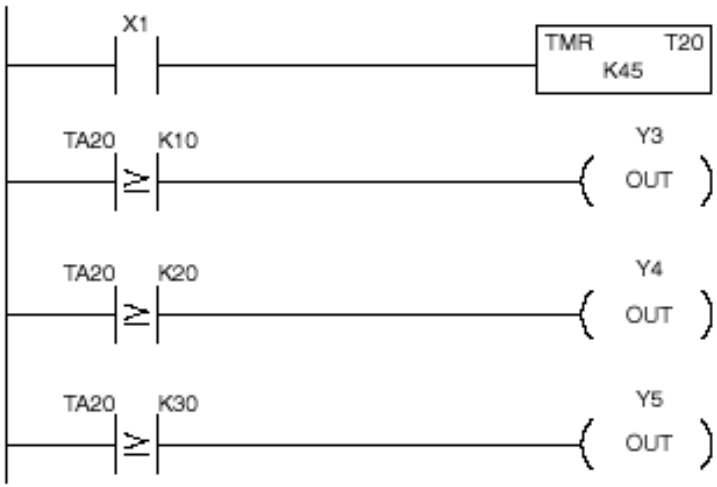
Latch timer input if it may go low before timeout!

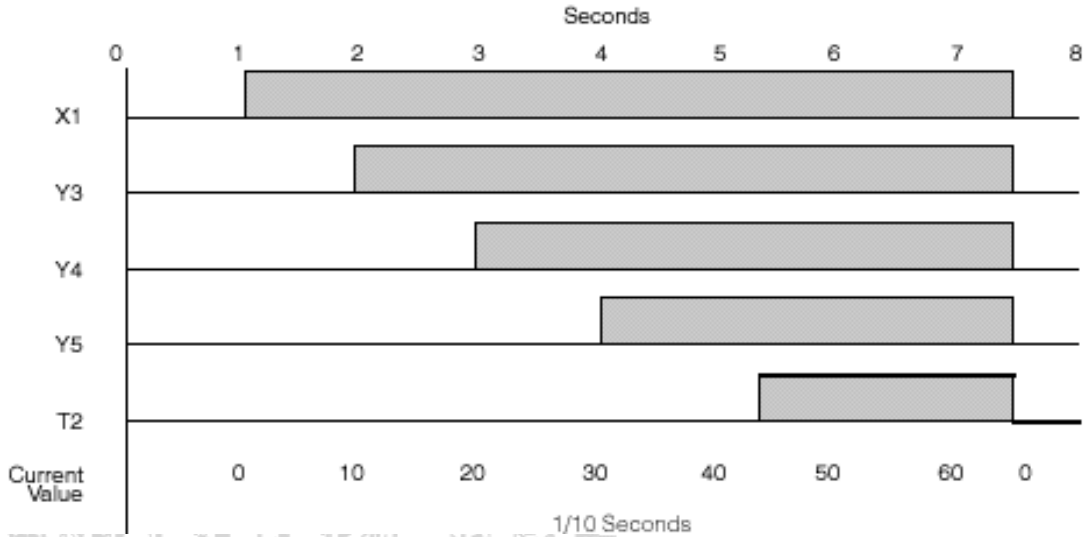
TMR: 0.1s to 999.9s

TMRF: 0.01s to 99.99s



Timers - TMR and TMRF



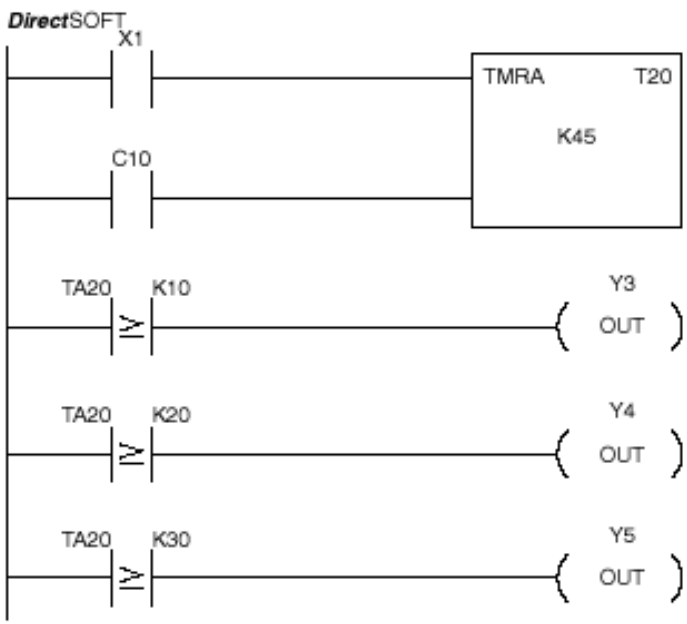


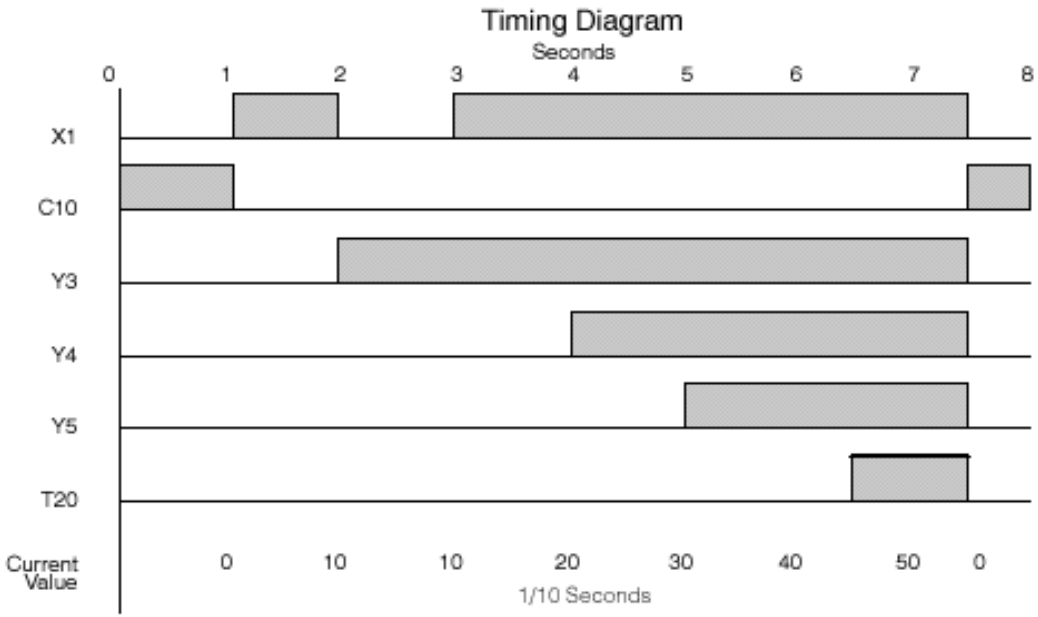
You can use the current timer value to trigger events.

Timers - TMRA and TMRAF

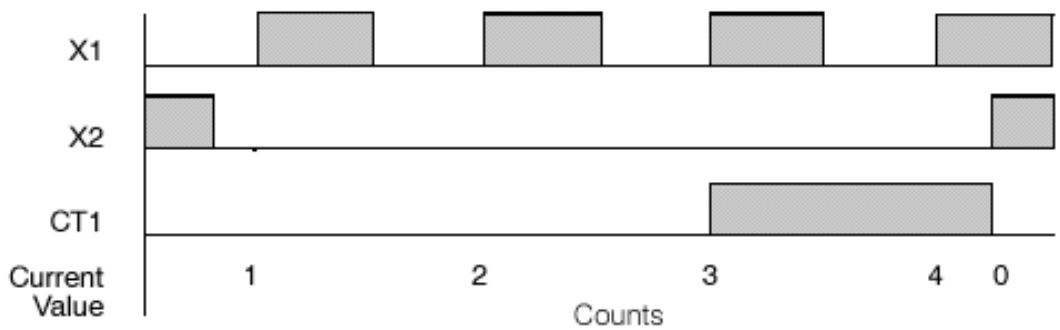
Accumulative Timer (TMRA)

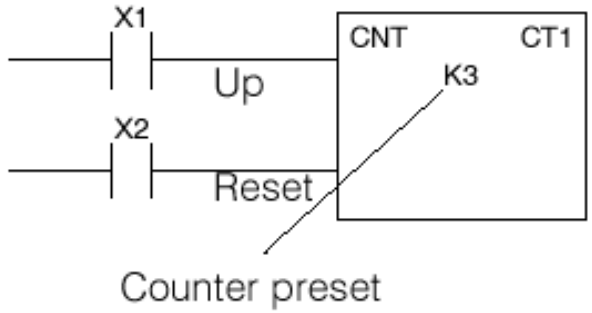
- Can be started, stopped and reset

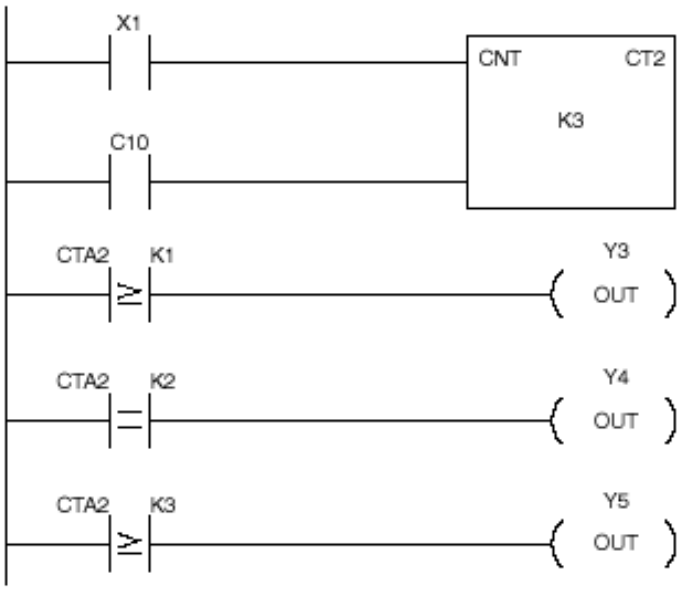


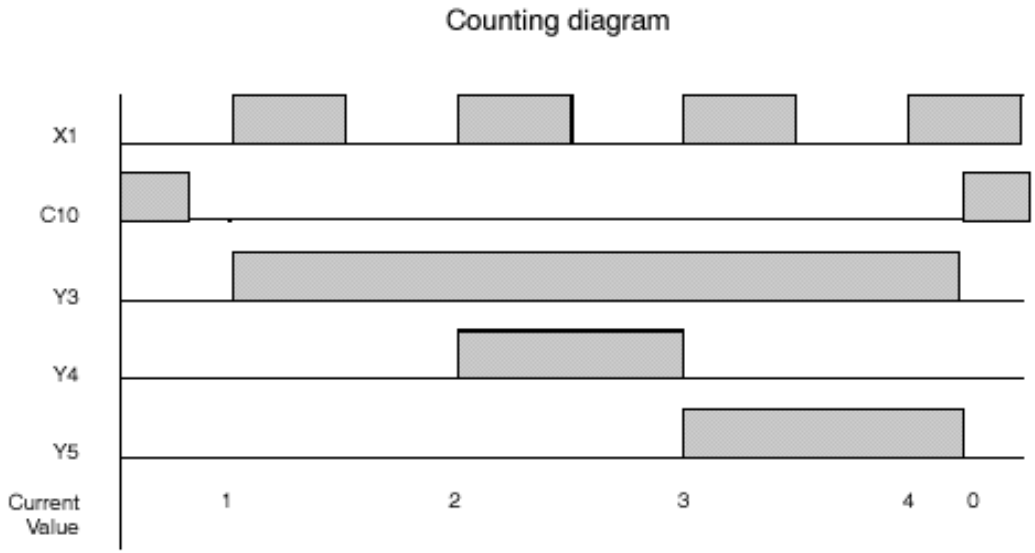


Counters - CNT

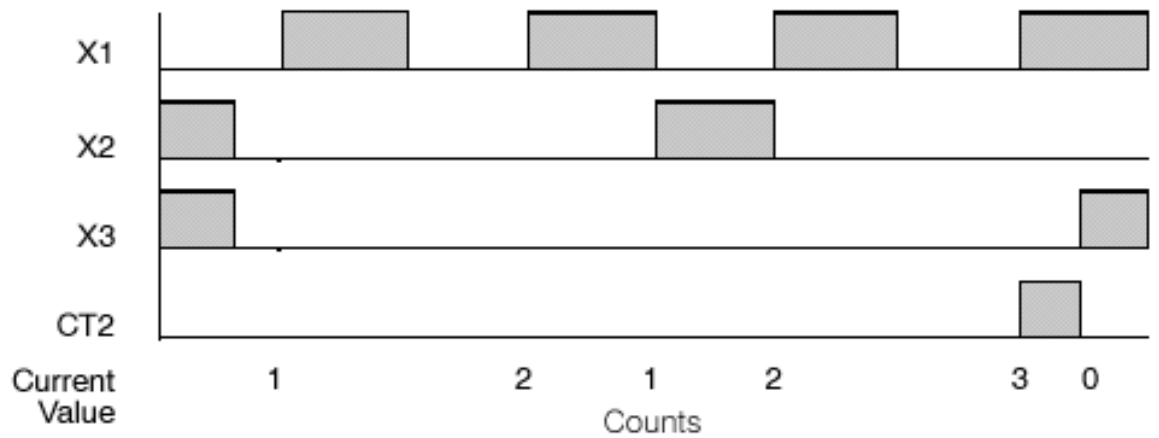


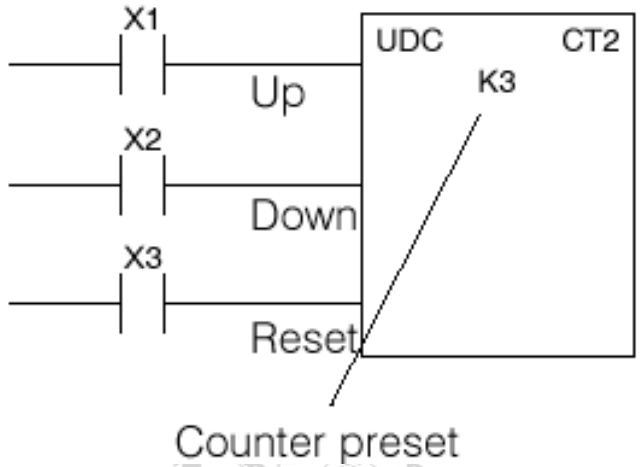






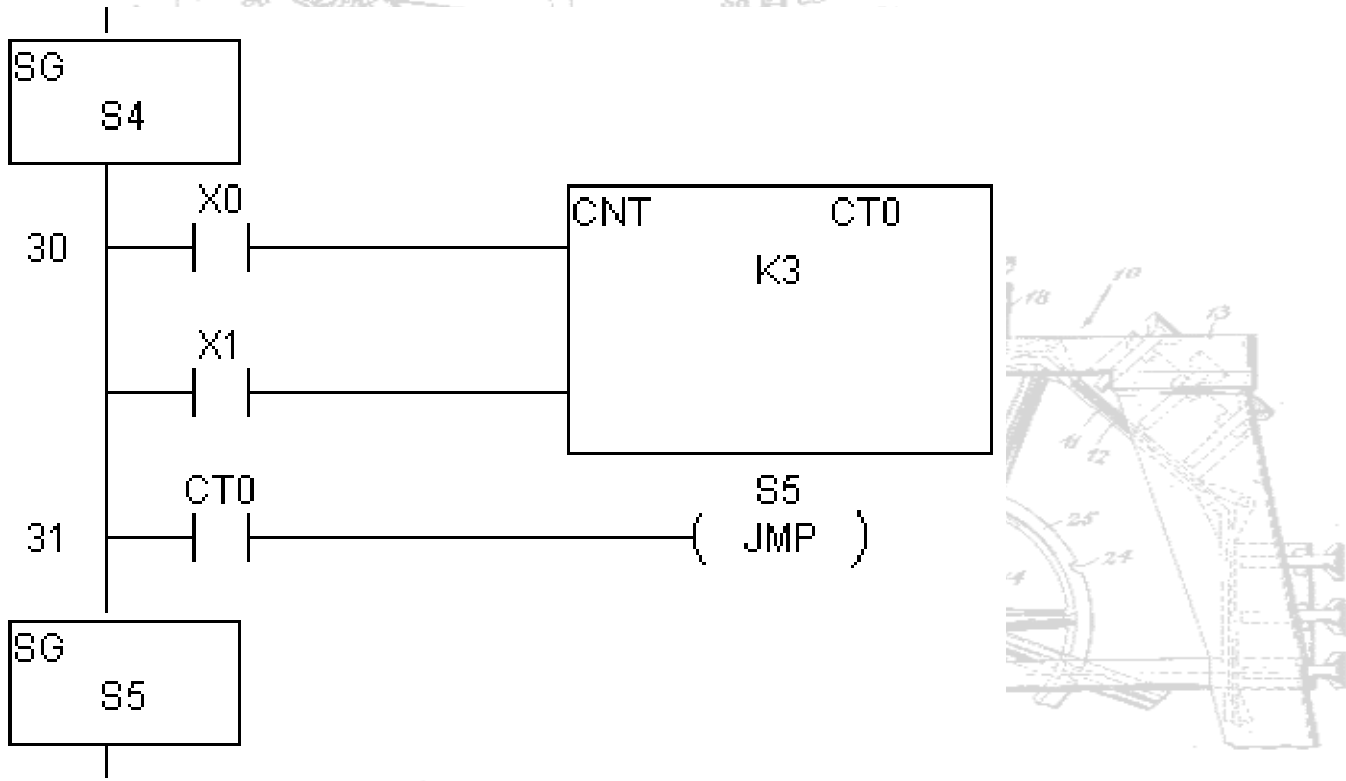
Counters - UDC





Counters - SGCNT

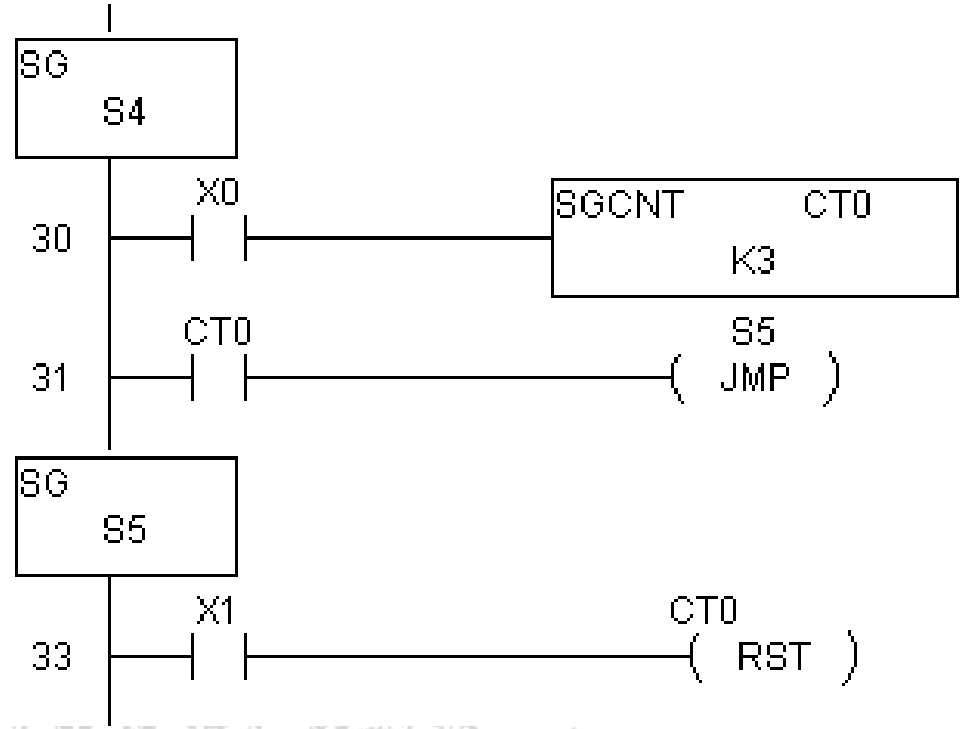
What if you need to reset a counter after you have left the stage?

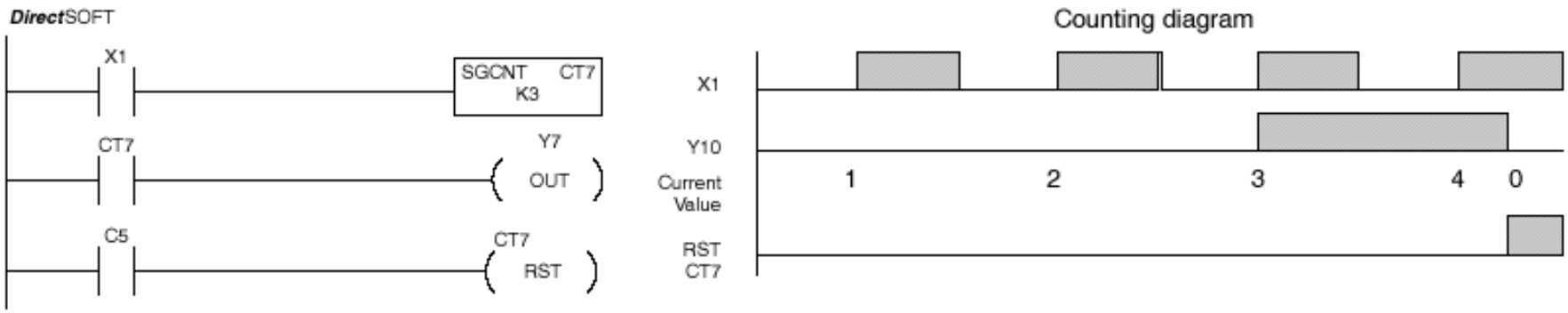


Counters - SGCNT

Stage Counter

-Reset with a special RST coil.





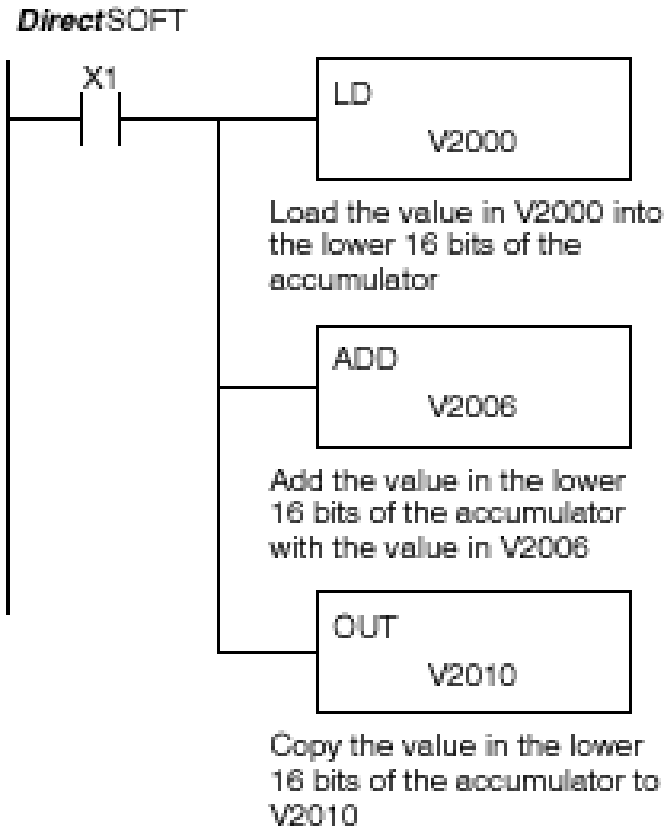
PLC Memory

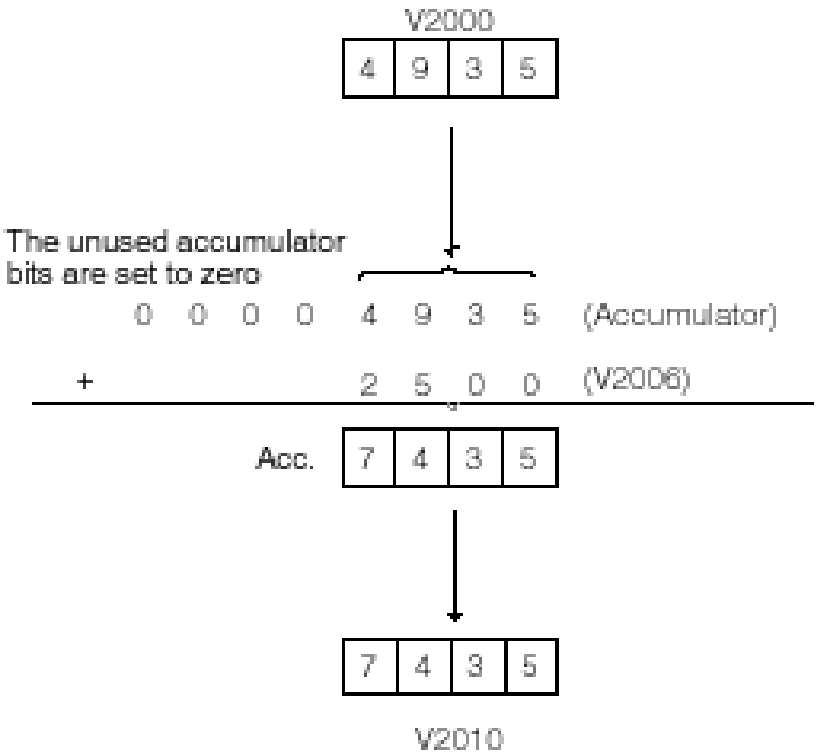
- Memory Addresses
  - V0000, V0001, V0002,…,V0007,V0010
  - Addresses are specified in OCTAL (base 8)
- Memory Values
  - Each memory location holds 16 bits (2 bytes)
- Constants
  - Constants to load into memory are specified in Binary Coded Decimal (BCD)
  - Two BCD digits fit in one byte, four digits in one memory location

PLC Memory

- Memory locations are loaded from the ACCUMULATOR, where all math is done
- The Accumulator is 32 bits wide
- LDD loads accumulator with an eight digit BCD number
- OUT moves this number into memory

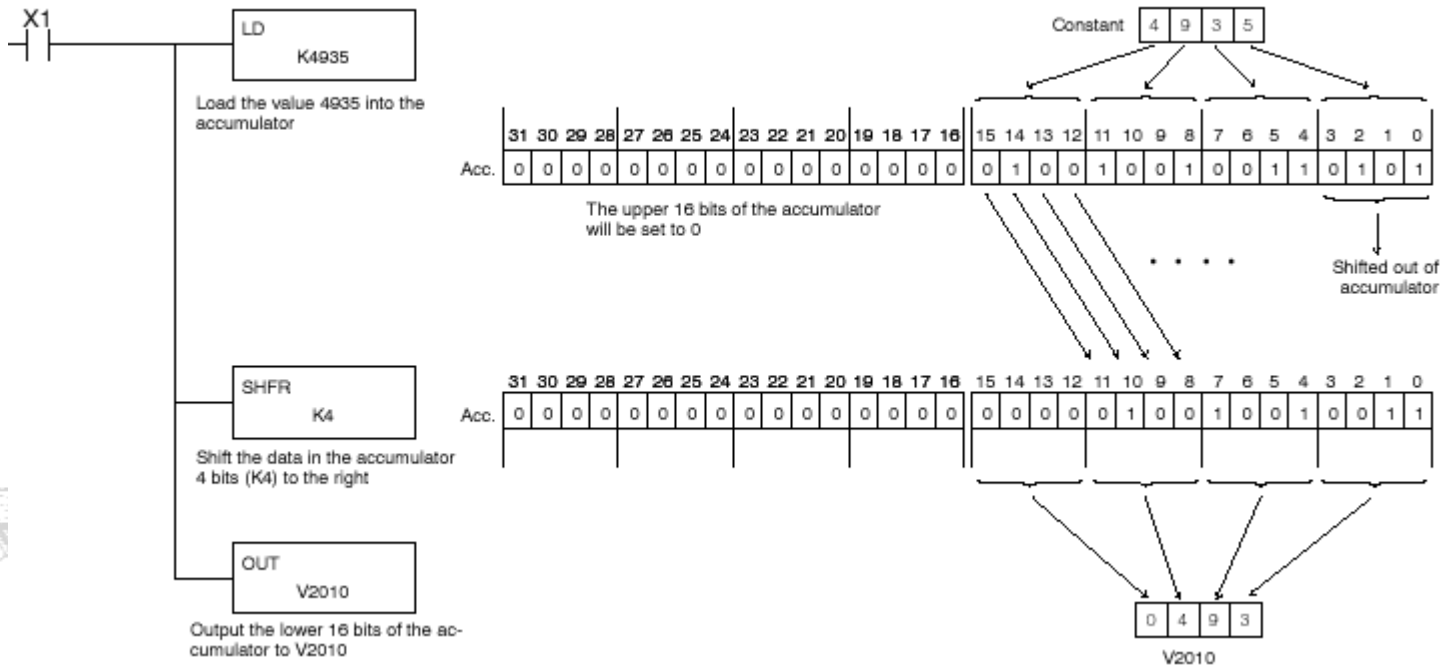
Math Functions





V2000, V2006, V2010 are variable memory locations

PLC Memory


X1
LD
K4935
Load the value 4935 into the accumulator
SHFR
K4
Shift the data in the accumulator 4 bits (K4) to the right
OUT
V2010
Output the lower 16 bits of the accumulator to V2010
Constant
4 9 3 5
31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
Acc.
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 1 0 0 1 1 0 1 0 1
The upper 16 bits of the accumulator will be set to 0
Shifted out of accumulator
Acc.
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 1 0 0 1 1
0 4 9 3
V2010