COURSE – PLC AND SCADA **COURSE CODE – 18INT52**

Experiment Number – 3
Duration - 2 Hours

Title of Experiment –

1. Understanding of Function of Counter used in PLC Programming – UP Counter / Down Counter / Up – Down Counter
2. PLC Programming of Counters

Objective of the Experiment

The students are required to understand the following –

- Functioning of Counters
- Problem solving of Counters

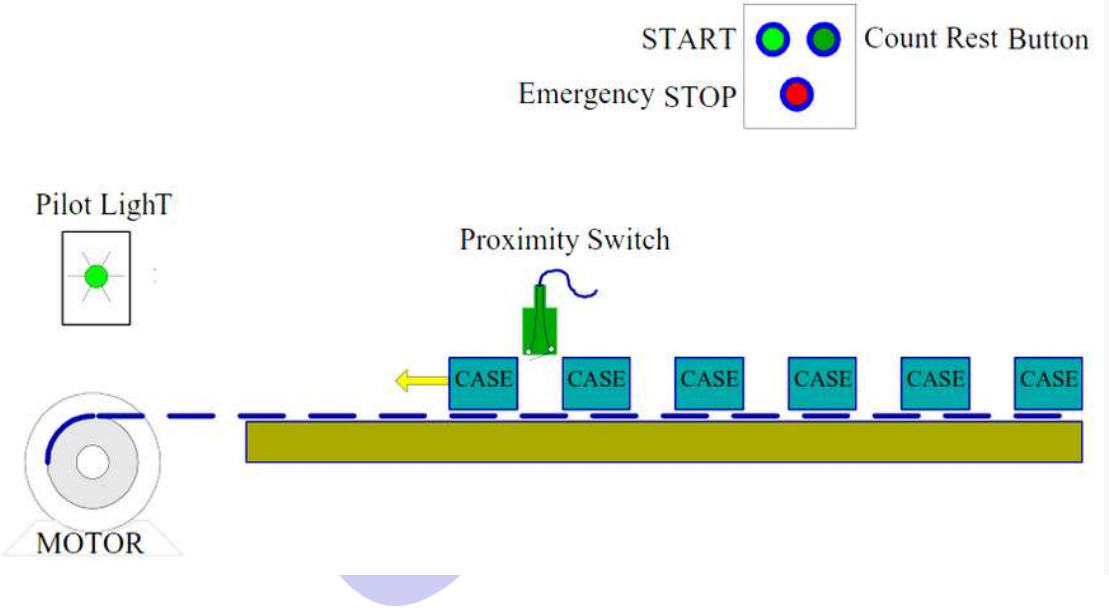
Intended Learning Outcomes : At the end of the experiment the student should be able to do

1. PLC Programming – Up Counter / Down Counter / Up-Down Counter

Software/Equipment/Tools Required:

PC, PLC Software,

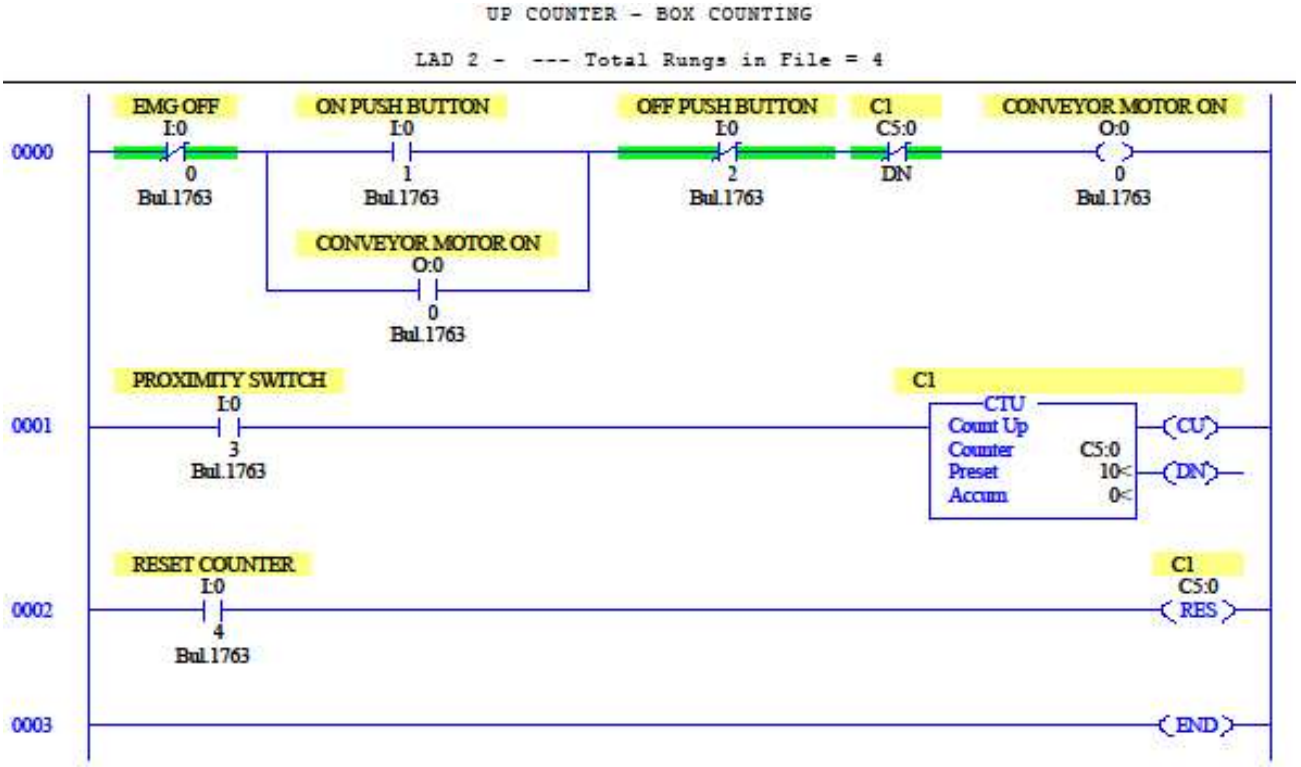
Problem 1 –
UP Counter – Box Counting



Sequence of Operation

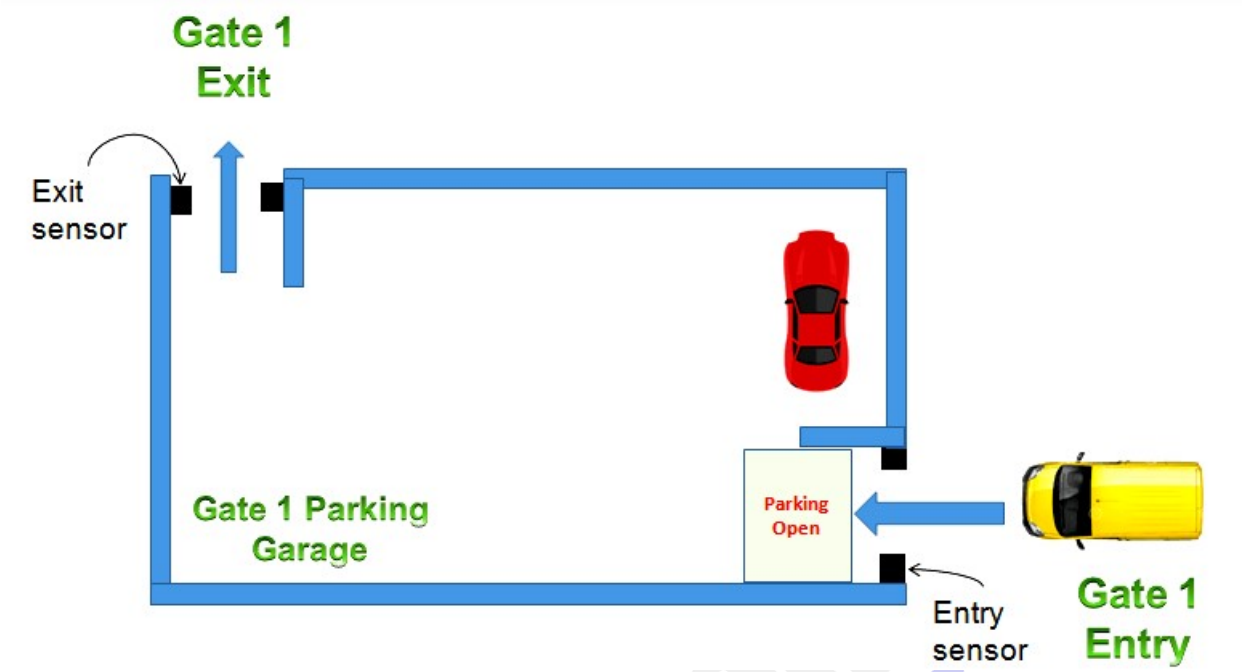
1. The Start button is pressed to start the conveyor motor.
2. Cases move past the proximity switch and increment the counter's accumulated value.
3. After a count of 10, the conveyor motor stops automatically.
4. The conveyor motor can be stop manually without losing the accumulated count.
5. The accumulated count of the counter can be reset using the counter reset button.

Write the Ladder Programme -



Problem 2

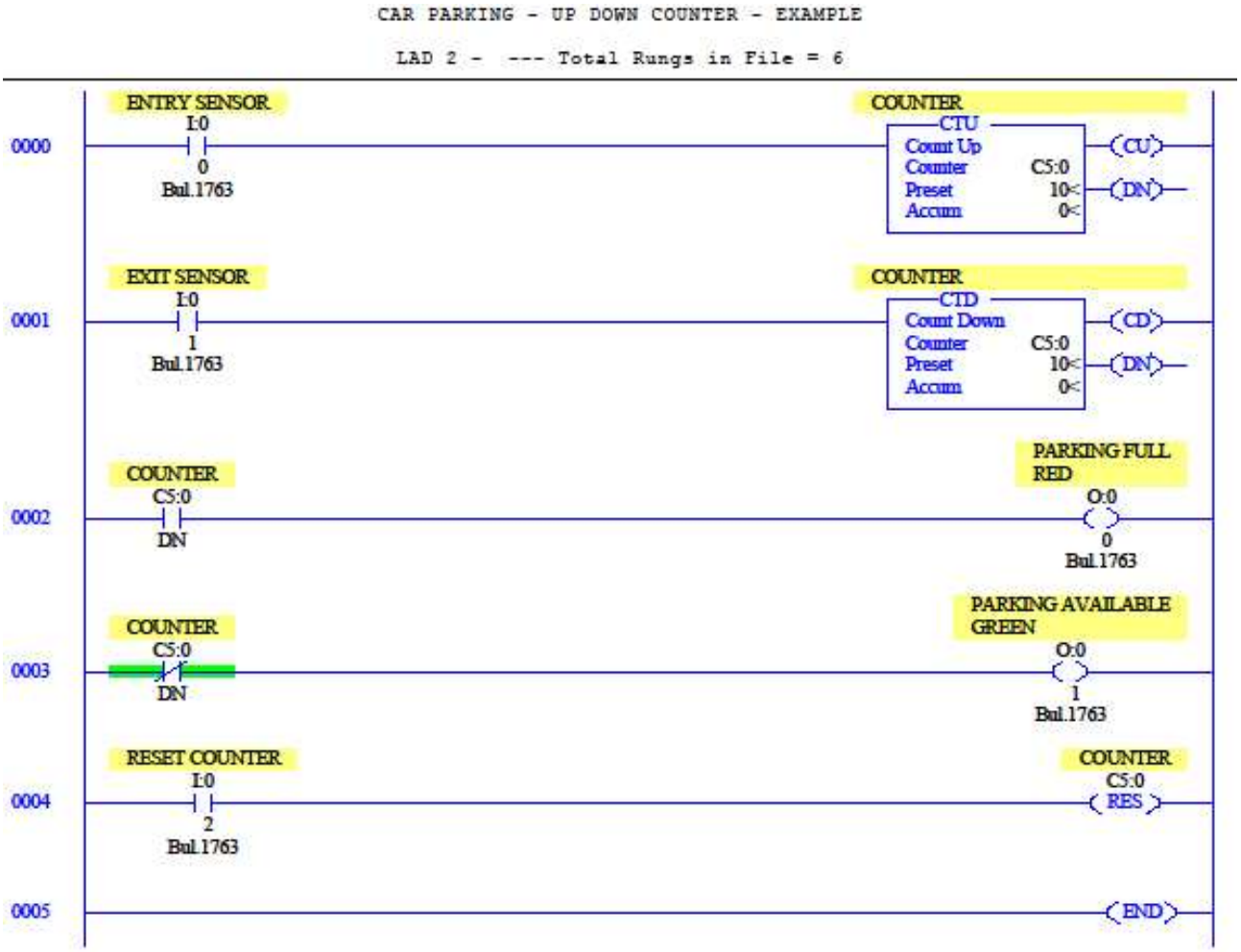
Car Parking - Up / Down Counter - EXAMPLE



Sequence of Operation

1. As a car enters, the enter switch triggers the up counter output instruction and increments the accumulated count by 1.
2. As a car leaves, the exit switch triggers the down counter output instruction and decrements the accumulated count by 1.
3. Because both the up- and down-counters have the same address, C5:0, the accumulated value will be the same in both instructions.
4. Whenever the accumulated value of 10 equals the preset value of 10, the counter output is energized by the done bit to light up the Lot Full sign (Red Light).
5. When the accumulated value is less than the preset value, it will light up the Lot Available (Green Light).
6. A reset button has been provided to reset the accumulated count.

Write the Ladder Programme -



Precautions: Students must use proper type and range of the meters. They must show the wiring connections before switching the supply on.

Conclusion/Critical Observation: Students learn the following

1. Basic PLC Programming – Counters