PLC Lab 6: Component / Assembly Detection and Sorting

Objectives

1. Detect unmatched plastic rings and reject them
2. Detect unmatched metal pegs and reject them
3. Detect completed assemblies
4. Allow completed assemblies to pass to end

Procedure

1. Execute sorting and queuing routines to complete assembly
2. Use sensor along the belt conveyor to detect objects:
   a. I 5: Inductive metal sensor
   b. I 3: I IR through beam—detects the presence of any object.
   c. I 11: Capacitive sensor—detects extreme close proximity of completed assemblies
   d. I 12: IR reflective sensor near capacitive sensor—detects the presence of any object.
   e. I 10: IR reflective sensor at reject solenoid—detects the presence of any object passing.
3. Gate sensors and outputs such that objects can be determined and sorted / rejected.

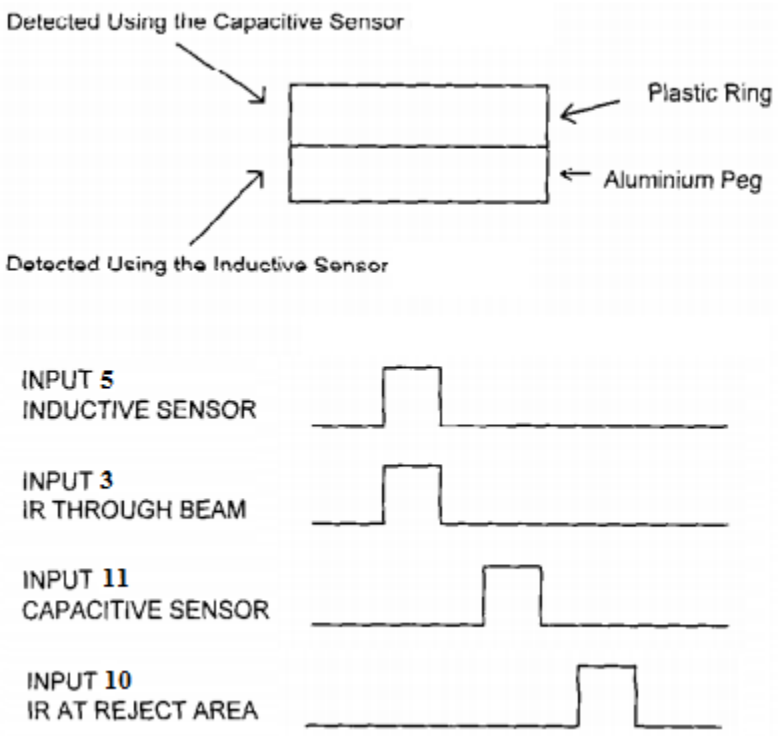

Figure 5: Sensor Signal Sequence for an Assembled Product.