

## Trimmer single copy and three copy rejection

**Problem:** To eliminate both single and three copies in order to avoid false counting in the stacker thereby preventing excess or deficit bundles in reaching the agents.

**Solution:** To implement a rejection system by using a light sensor to detect single and three copies in the Grippers and eliminate them in the check copy station.

### Components Required:

- 1. Sensor:** Any Light barrier diffuse type sensor can be used for the application. We used Baumer diffusion type laser sensor for detecting the false copies in the ball control station. This sensor is positioned in such a way that it gives pulses based on the copies present in the gripper. For single copy, two copies and three copies it gives 2 pulses, 3 pulses and 4 pulses respectively.
- 2. Controller:** The Controller should be able to count pulses at high speed. Also it should have Digital I/O's in order to implement rejection system. In order to process the pulses from the sensor, we used FX series PLC as the controller. The PLC will count the pulses received from the sensor and take decisions based on the pulses received. If pulses corresponding to false copies received, it will give command to reject chute to eliminate that particular copy. Gripper reference is taken as sensor trigger.

### List of Components Used:

- 1.** Baumer Diffusion sensor-FHDM 12P5001/S35A
- 2.** FX series PLC- FX-ON-40MT-DSS

Connection Diagram:













