

## Homework Assignment # 2:

A welding station is controlled by a PLC. On the outside is a safety cage that must be closed while the cell is active. A belt moves the parts into the welding station and back out. An inductive proximity sensor detects when a part is in place for welding, and the belt is stopped. To weld, an actuator is turned on for 3 seconds. As normal the cell has start and stop push buttons.

Design the ladder logic diagram with complete detail.

### Inputs

DOOR OPEN (NC)  
START (NO)  
STOP (NC)  
PART PRESENT

### Outputs

CONVEYOR ON  
WELD