



Integrated Manufacturing Systems Troubleshooting

AMTEC PLC Logic Analysis Exercise – Instructor Directions

Student Name: _____

Date: _____

Instructions: Using the Electrical prints, the PLC Ladder Logic prints, the Tag listing prints and the AMTEC Junction box addressing handout, complete the following exercise:

From operating the AMTEC Trainer, you should have noticed that to cycle start the system a Puck has to be in place and the cycle start finger button has to be initiated. This will initiate the VFD drive on the simulator. (Forward signal to the VFD drive and an Analog signal to set speed.)

From analysis of the PLC logic, trace backwards from the VFD forward signal to these inputs, when complete note the logic subroutine and the rung that references these inputs. Be prepared to explain the backwards process, rung by rung, that you took. Show work below:

- **Instructor note:** The path back to the finger switch is pretty straight forward. However, the Puck in place is not really a trigger for this action. The VFD drive is initiated for a split second and then the station faults out. Even though the students think of this as a trigger... it is really part of the fault routines. The VFD was started without a puck present.
- These exercises insure that the students can use the Electrical prints, the PLC Ladder Logic prints, the Tag listing print-offs and the AMTEC Junction box addressing handout.
- After this point in the class, the students can use the Laptops with studio 5000 to work back to the triggers. The PLC Logic was included in day one down load. Look for the .ACD file.
- One of the system optimization labs will be for the students to modify the PLC logic so that the puck in place Photo-eye is really a trigger for the cycle start...and not a fault that shuts down the system.





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