

# **K-09b**

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## **ELECTRICIAN TRAINING**

### **TRAINER'S GUIDE**

**Duty K: PLC (Modicon)  
K-09b: Troubleshoot Processor**

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## **Instructions To The Trainer**

1. The Learner will contact you when ready to practice troubleshooting a processor.
2. Be prepared to demonstrate the steps for this task.
3. Ask the Learner to contact the Evaluator when ready for the Skill Check.



## **Skill Objective**

Upon notification of a complete machine shutdown, no communication between the controller and the I/O boards or the programmer, or no illuminated “Active” lights on the I/O boards, troubleshoot the processor.

### **Task Standards**

1. The Learner must perform a complete analysis of the processor.
2. The Learner must recommend a corrective action.
3. Corrective action resolves the processor problem.

## What The Learner Will Need

This section contains the safety information, tools, and resources you will need before troubleshooting a processor.



- Follow all Caterpillar Facility Safety Standards when performing this task in the plant.
- Use caution when working around the PLC; high voltage is present on the inside of the PLC cabinet door and near the I/O chassis.
- Wear safety glasses and hearing protection in assembly and production areas.



- P190 programmer (Typically used with the 184, 384, 484, 584, 884, and 984 processors.)
- P230 programmer (Used with the 984 processor and the 184, 384, 484, 584, and 884 processors in the P190 emulator mode.)
- PLC communication cable
- Tape Loader Tape (P190 only)
- Program Loader Tape (P190 only)
- Modicon Bus Plus (Used with all processors.)
- Wiggy voltage tester



- Basic Help Keys, available on programmer software
- Modsoft Programmer User's Manual (GM-MSFT-001 Rev. F)
- Modicon P230 Quick Key reference card
- Ladder Diagram printout
- Modbus Plus Data Highway Chart
- Machine print



## **Practice Set-Up**

The Learner may perform the following practice to help prepare for the Skill Check. Set up the practice for the Learner. Assist the Learner during the practice, if necessary; answer any questions concerning the task; and be prepared to demonstrate the task to the Learner. Make sure the Learner follows safe work practices while practicing the task.

### **Practice**

Simulate a processor problem so that the Learner can practice troubleshooting the processor. The following is a list of potential set-up options: Turn off a device in the Ladder Diagram or remove the power supply from the processor.

### **Practice Objective**

The Learner should determine what you have done to set up the practice by following the task steps. The Learner should determine the solution to the PLC problem. At this point, the Learner should communicate with the processor and restart the controller.

## **Next Step**

Allow the Learner to continue practicing and developing skills needed to demonstrate the task. The Learner should ask the Evaluator to schedule a Skill Check whenever he or she is ready to demonstrate the task unaided and meet all the task standards and safe work practices.