

# K-08a

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## ELECTRICIAN TRAINING

### TRAINER'S GUIDE

Duty K: PLC (Allen-Bradley)  
K-08a: Troubleshoot Peripheral  
Issued 01/01/98

## **Instructions To The Trainer**

1. The Learner will contact you when ready to practice troubleshooting a peripheral.
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 peripheral-related problem, troubleshoot the peripheral.

### **Task Standards**

1. The Learner identifies the peripheral-related problem.
2. The Learner recommends the appropriate corrective actions.

## What The Learner Will Need

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



- 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 input/output (I/O) chassis.
- Perform Lockout and Tagout procedure if you must place the machine static state.
- Be careful when working near moving or rotating machinery.
- Wear safety glasses and hearing protection in assembly and production areas.



- PC equipped with PLC software
- PLC
- Interconnect cable
- Basic electrical hand tools
- Voltmeter
- Processor Keyswitch Key (if the processor is not in the REM position)
- Password (if necessary)



- Electrical Schematics
- Ladder Diagram printout
- ZMS procedure
- Diagnostic screens (Marquee, Panel View)
- User's Manual for peripheral devices



## 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

Designate a PLC location with a peripheral device for the Learner to practice troubleshooting a peripheral. The Learner should practice the task online. Insert a problem into the hardware or software. Use one of the following problems or create a problem that would require troubleshooting.

- Interrupt the communication link between the PLC and the peripheral device.
- Simulate a bad input in the PLC that is supposed to trigger an activity in the peripheral.
- Simulate a bad output in the PLC that is supposed to be triggered from the peripheral.
- Manipulate the configuration between the PLC and the peripheral device.
- Manipulate the program in the PLC to simulate problems in the peripheral device.

Ask the Learner to demonstrate the safe work practices while performing this task.

### Practice Objective

The Learner should locate and identify the problem and recommend appropriate corrective action. The Learner should demonstrate safe work practices.

## 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.