

# **K-07b**

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## **ELECTRICIAN TRAINING**

### **TRAINER'S GUIDE**

**Duty K: PLC (Modicon)  
K-07b: Replace I/O Module**

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## **Instructions To The Trainer**

1. The Learner will contact you when ready to practice replacing an I/O module.
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**

When an I/O module is faulty or when a new machine installation has occurred, replace the I/O module.

### **Task Standards**

1. The replaced module is identical to the original module.
2. The replaced module communicates with the processor, allowing the machine program to run according to specifications.
3. The Learner must cycle the machine to verify that the module is functioning within specifications.

## What The Learner Will Need

This section contains the safety information, tools, and resources you will need before replacing an I/O module.



- 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
- Wiggy voltage tester



- Basic Help Keys, which are available on programmer software
- Modsoft Programmer User's Manual (GM-MSFT-001 Rev. F)
- Lockout/Tagout Procedures



## **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**

Have the Learner practice removing and installing the 800 or 200 series I/O modules into the housing with your supervision. Contact an Operator when the Learner is ready to begin practice to arrange a convenient time to practice the task. Ask the Learner to discuss safety issues regarding the removal and installation of the modules.

### **Practice Objective**

The Learner should remove and install one of the 800 or 200 series I/O modules. With your supervision, the Learner should perform all of the steps to remove and reinstall the module. The Learner should discuss the safety issues regarding the removal and installation of the processor (e.g., lockout and tagout procedures, installing the correct processor with the correct configuration, and restarting the machine). The Learner should verify that the machine is returned to its normal condition.

## **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.

