Effective November 2016
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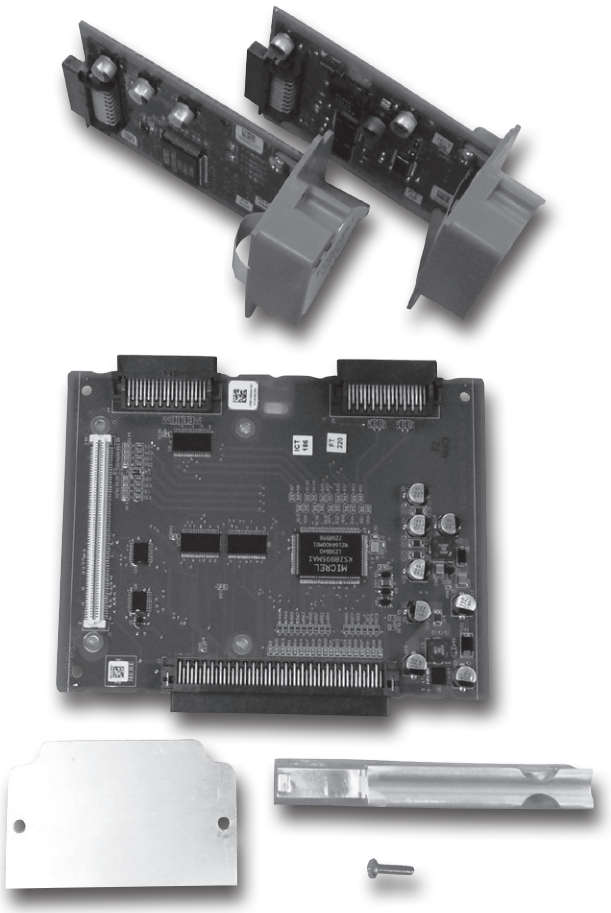
CL-7 Voltage regulator control communications module installation instructions



Powering Business Worldwide

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Contents

Safety for life

Eaton's Cooper Power series products meet or exceed all applicable industry standards relating to product safety. We actively promote safe practices in the use and maintenance of our products through our service literature, instructional training programs, and the continuous efforts of all Eaton employees involved in product design, manufacture, marketing, and service.

We strongly urge that you always follow all locally approved safety procedures and safety instructions when working around high voltage lines and equipment, and support our "Safety For Life" mission.

Safety information

The instructions in this manual are not intended as a substitute for proper training or adequate experience in the safe operation of the equipment described. Only competent technicians who are familiar with this equipment should install, operate, and service it.

A competent technician has these qualifications:

- Is thoroughly familiar with these instructions.
- Is trained in industry-accepted high and low-voltage safe operating practices and procedures.
- Is trained and authorized to energize, de-energize, clear, and ground power distribution equipment.
- Is trained in the care and use of protective equipment such as arc flash clothing, safety glasses, face shield, hard hat, rubber gloves, clampstick, hotstick, etc.

Following is important safety information. For safe installation and operation of this equipment, be sure to read and understand all cautions and warnings.

Hazard Statement Definitions

This manual may contain four types of hazard statements:

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in equipment damage only.

Safety instructions

Following are general caution and warning statements that apply to this equipment. Additional statements, related to specific tasks and procedures, are located throughout the manual.

DANGER

Hazardous voltage. Contact with hazardous voltage will cause death or severe personal injury. Follow all locally approved safety procedures when working around high- and low-voltage lines and equipment. G103.3

WARNING

Before installing, operating, maintaining, or testing this equipment, carefully read and understand the contents of this manual. Improper operation, handling or maintenance can result in death, severe personal injury, and equipment damage. G101.0

WARNING

This equipment is not intended to protect human life. Follow all locally approved procedures and safety practices when installing or operating this equipment. Failure to comply can result in death, severe personal injury and equipment damage. G102.1

WARNING

Power distribution and transmission equipment must be properly selected for the intended application. It must be installed and serviced by competent personnel who have been trained and understand proper safety procedures. These instructions are written for such personnel and are not a substitute for adequate training and experience in safety procedures. Failure to properly select, install or maintain power distribution and transmission equipment can result in death, severe personal injury, and equipment damage. G122.3

Product information

Introduction

Service Information MN225066EN provides instructions for the installation of communications modules into the CL-7 voltage regulator control.

⚠ Read this manual first

Read and understand the contents of this manual and follow all locally approved procedures and safety practices before installing or operating this equipment. Read and understand the manuals detailing the installation and operation of the voltage regulator and the control used with the voltage regulator. Refer to Service Information MN225003EN, CL-7 Voltage Regulator Control Installation, Operation, and Maintenance Instructions for information on the CL-7 voltage regulator control. Refer to Service Information MN225008EN, VR-32 Voltage Regulator with Quik-Drive™ Tap-Changer Installation, Operation, and Maintenance Instructions for information on Eaton's Cooper Power series voltage regulator with Quik-Drive tap changer. Refer to Service Information MN225021EN, CL-7 Regulator Control Communications for more information on the operation of the communications equipment and programming the control for communications.

Additional information

These instructions cannot cover all details or variations in the equipment, procedures, or process described nor provide directions for meeting every possible contingency during installation, operation, or maintenance. For additional information, please contact your Eaton representative.

Acceptance and initial inspection

This kit is thoroughly inspected at the factory. It is in good condition when accepted by the carrier for shipment. Upon receipt of the communications module kit, a thorough inspection should be made for damage, evidence of rough handling, or shortages. Should this initial inspection reveal evidence of rough handling, damage, or shortages, it should be noted on the bill of lading and a claim should immediately be made with the carrier. Also, notify your Eaton representative.

Handling and storage

Be careful during handling and storage of equipment to minimize the possibility of damage. If the kit is not to be placed into immediate use, store the kit where the possibility of damage is minimized.

Quality standards

ISO 9001 Certified Quality Management System

Description

The communications module kit provides the hardware needed to install a communications module or modules into a CL-7 voltage regulator control.

Table 1. Kit part identification

Item	Description	Qty
1	Communications Module	1 or 2
2	Communications Base Circuit Board	1
3	Support Bar, Aluminum	1
4	Blank Slot Cover	1
5	Screw, #6-32 Phillips	1

Installation instructions

1. Remove the control from the control box. To do this, wthe Control Function switch should be set to OFF, the control Power switch should be set to OFF, the V1 switch in the back panel should be opened and the C switch should be closed. Unplug the wiring harness and disconnect the green ground wire. Remove the control from the hinge pins.
2. Remove the four screws retaining the cover over the communications module slots. Retain the screws. See Figures 1 and 2.

Note: If a communications base circuit board has already been install in the control, skip to Step 7.

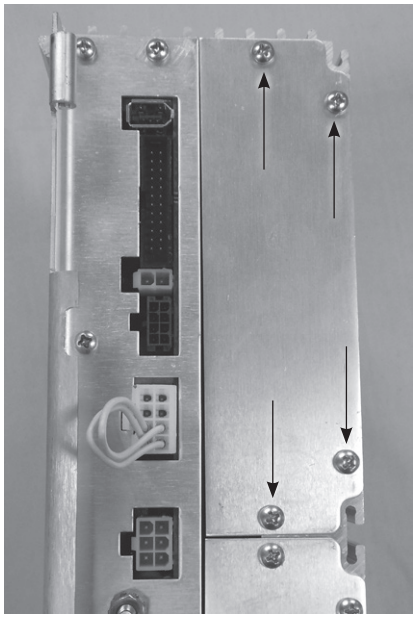

Figure 1. Remove screws shown to open the cover of the communications module slots

Figure 2. Communications module slots with cover removed

3. Install the communications base board partially into the slots. Make sure the connections for the communications modules are facing toward the front of the control and to the outside. See Figure 3.

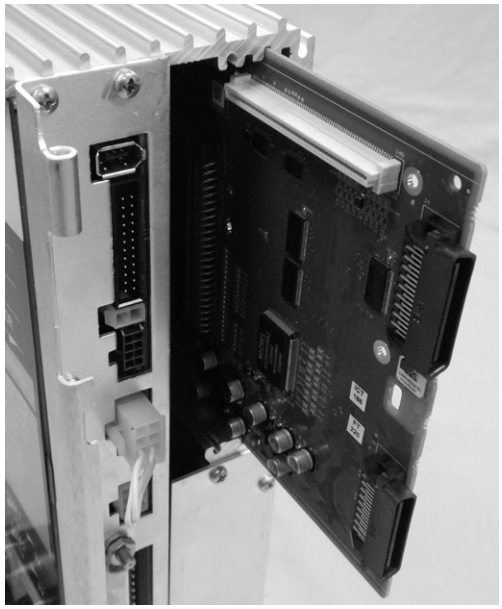

Figure 3. Installing the communications base board

4. Locate the nib on the aluminum support bar (Figure 4) and the hole in the base circuit board (Figure 5).

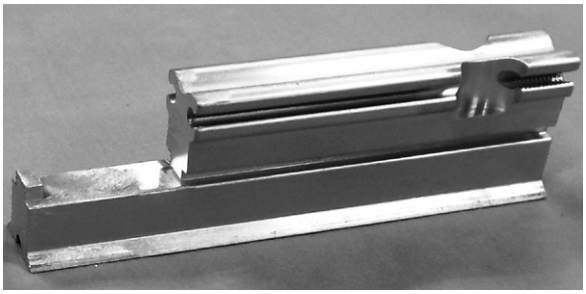

Figure 4. Support bar nib

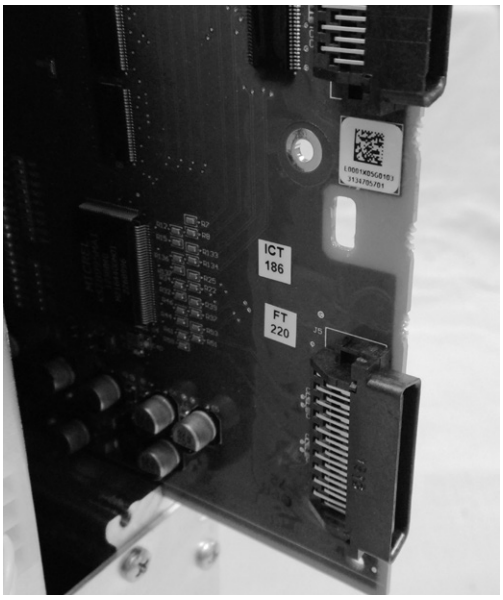

Figure 5. Hole in the base circuit board

5. Hook the support bar nib into the hole in the base circuit board (Figure 6) and begin to push the circuit board into the slots. While pushing the base circuit board in, line up the support bar into the guide grooves in the back of the communications module slots. (Figure 7).

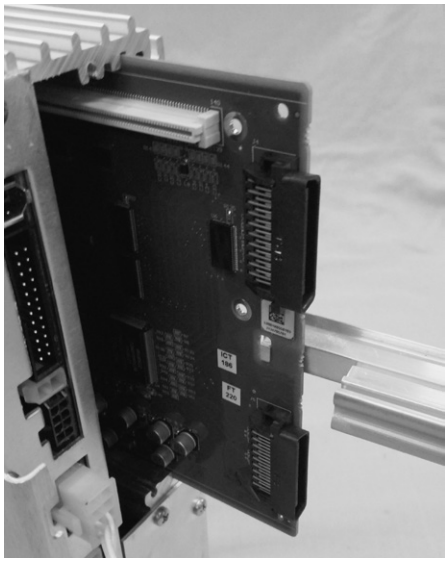

Figure 6. Hooking the support bar nib into the hole in the base circuit board

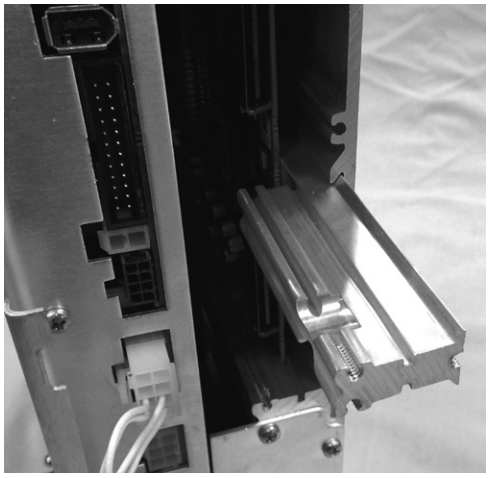

Figure 7. Pushing the base circuit board into the guide grooves

6. Push the communications base circuit board all the way in using the support bar and secure with the provided screw. See Figure 8.

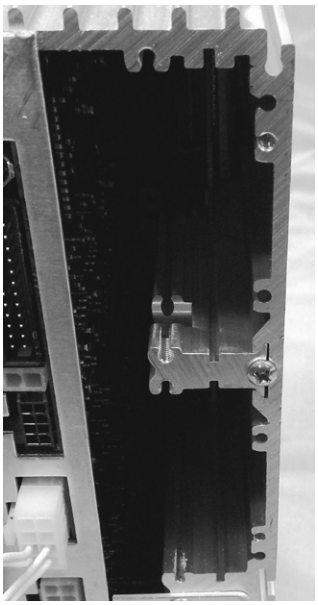

Figure 8. Support bar fully inserted and secured with a screw

7. Install the communications module into the top communications module slot (Com Port 1) and secure with two of the screws retained in Step 1. See Figures 9 and 10.

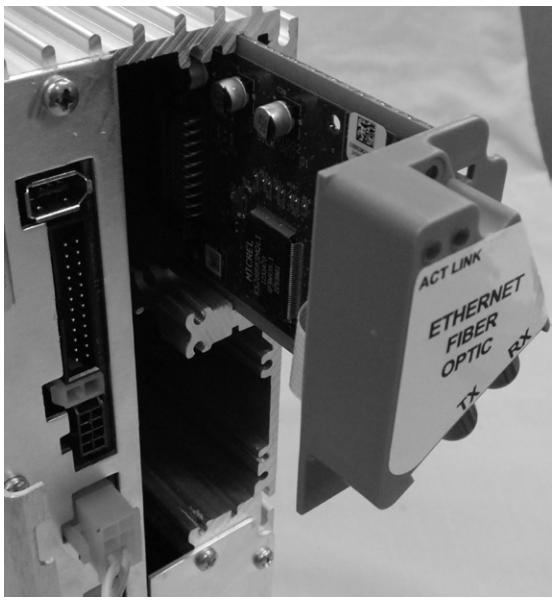

Figure 9. Inserting communications module into Com Port 1 communications slot

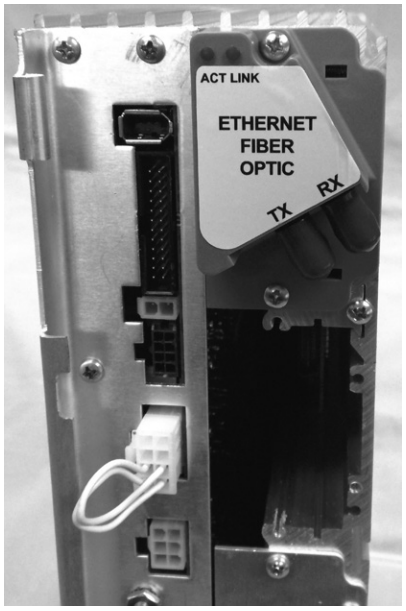

Figure 10. Communications module secured with screws

8. A second communications module can be installed in the lower slot (Com Port 2) (Figure 11) or the supplied cover can be placed over the slot if it is not needed (Figure 12). Either the module or cover should be secured with two screws retained in Step 1.

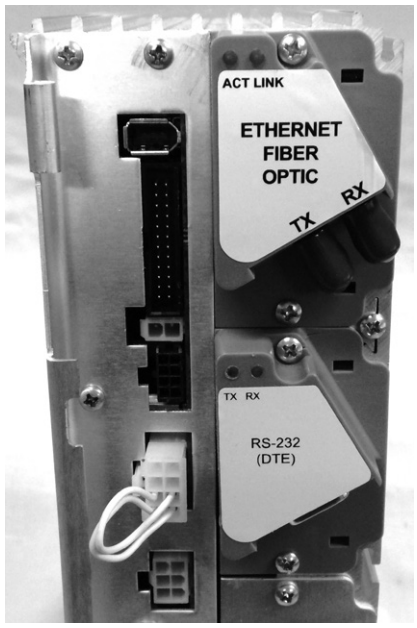

Figure 11. Two communications modules installed

Figure 12. One communications module installed with the other slot covered

9. Install the control into the control box by placing it on the hinge pins. Connect the green ground wire and plug in the wiring harness. Consult *Service Information MN225003EN, CL-7 Voltage Regulator Control Installation, Operation, and Maintenance Instructions* for instructions on powering and programming the control. Consult *Service Information MN225008EN, VR-32 Voltage Regulator with Quik-Drive Tap-Changer Installation, Operation, and Maintenance Instructions*, for safe installation and voltage regulator operation instruction.
10. Consult *Service Information MN225021EN, CL-7 Regulator Control Communications*, for detailed instructions on the operation of the communications equipment and programming the CL-7 control for communications.

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Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton's Power Systems Division
2300 Badger Drive
Waukesha, WI 53188
United States
Eaton.com/cooperpowerseries

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