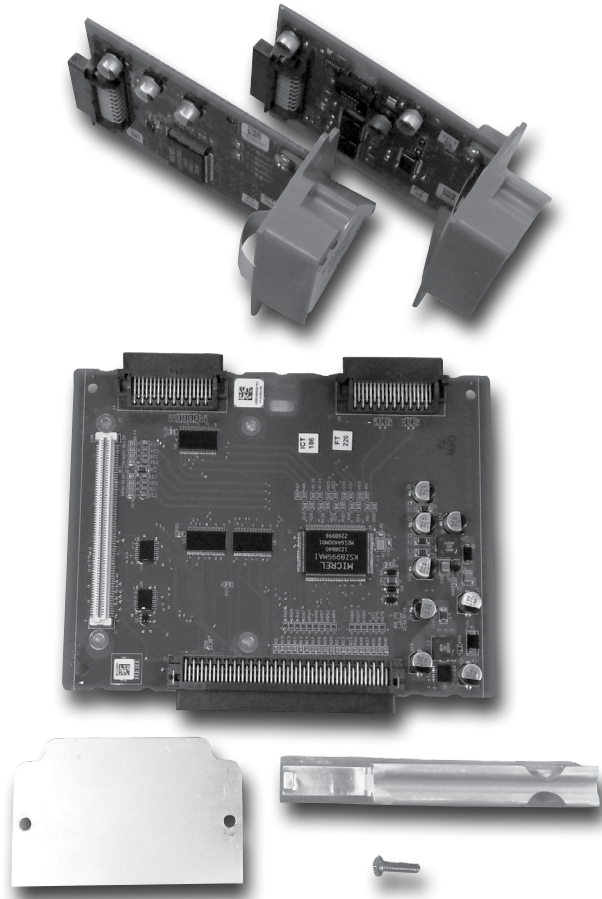


Form 4D Recloser Control Communications Module; Installation Instructions



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Safety for life



Eaton meets or exceeds all applicable industry standards relating to product safety in its Cooper Power™ series products. 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.

NOTICE

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.

G122.2

Product information

Introduction

Service Information MN280091EN provides installation and operation instructions for the Form 4D recloser control.

IMPORTANT

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 recloser and the control used with the recloser. Refer to *Service Information MN280049EN Form 4D Microprocessor-Based Pole-Mount Recloser Control Installation and Operation Instructions*.

Refer to *Service Information MN280086EN Form 4D 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 Form 4D recloser 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 | 2 per Communications Module 3 per Communications Base Circuit Board |

Installation instructions

Remove existing module

⚠ CAUTION

Equipment misoperation. The control must be removed prior to performing any maintenance, testing, or programming changes and must not be (re)connected to an energized recloser until all settings have been verified. Failure to comply can result in equipment misoperation, equipment damage, and personal injury.

G166.0

NOTICE

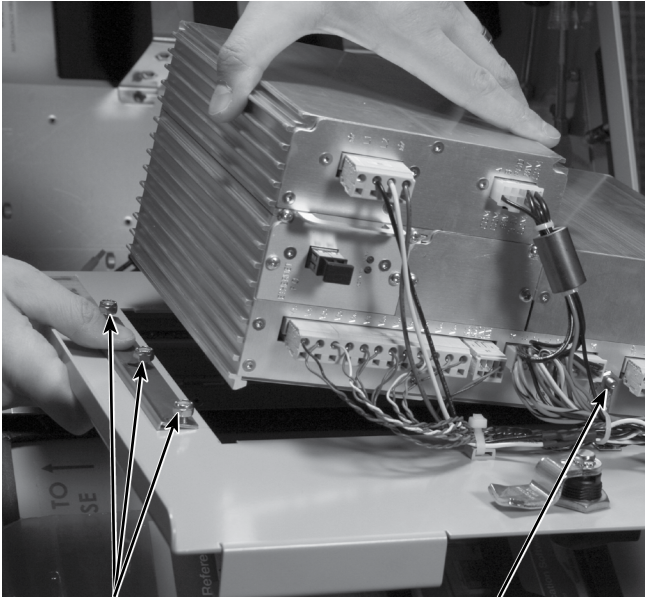
Control damage. De-energize both AC and DC power prior to removing or installing any internal connections or circuit boards in the control. Failure to comply can result in damage to the control.

T241.1

1. Retain the control settings by uploading the settings from the control. Refer to Upload Settings from Control section in *S280-104-2 Form 4D Control Programming Guide* for additional information.
2. Follow all locally approved safety procedures to remove the control from service.
3. Follow *MN280049EN* to remove the control from service. De-energize both AC and DC power.
 - a. Following established safety procedures, remove AC input power from TB1 or from AC input receptacle, if applicable.
 - b. Disconnect the control wiring to the battery(s).
4. Remove all wiring connections by unplugging each plug assembly from the side of the module (**Figure 1**).
5. Loosen, but do not remove, the module swing panel ground link 3/8-inch nuts with 3/8-inch nut driver (**Figure 2**).
6. Use a 1/4-inch nut drive to loosen, but not remove, the three (3) nuts from the retaining bar (**Figure 1**).
7. Slide the retaining bar up to release the module.
8. Remove the module from the swing panel.

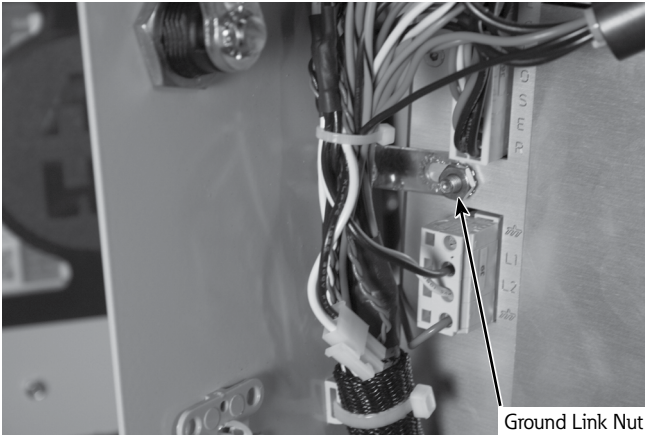
Form 4D Recloser Control Communications Module

Note: Rest the lower portion of the module on the swing panel opening.



Three (3) Retaining Bar Nuts Module Swing Panel Ground Link Nut

Figure 1. Loosen retaining bar nuts and tilt module back



Ground Link Nut

Figure 2. Loosen for removal, or align for installation, with ground link



Figure 3. Remove screws shown to open the cover of the communications module slots



Figure 4. Communications module slots with cover removed

9. 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 5**.



Figure 5. Installing the communications base board

10. Locate the nib on the aluminum support bar (**Figure 6**) and the hole in the base circuit board (**Figure 7**).

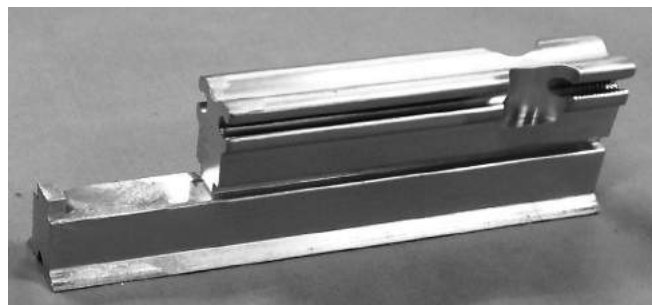


Figure 6. Support bar nib

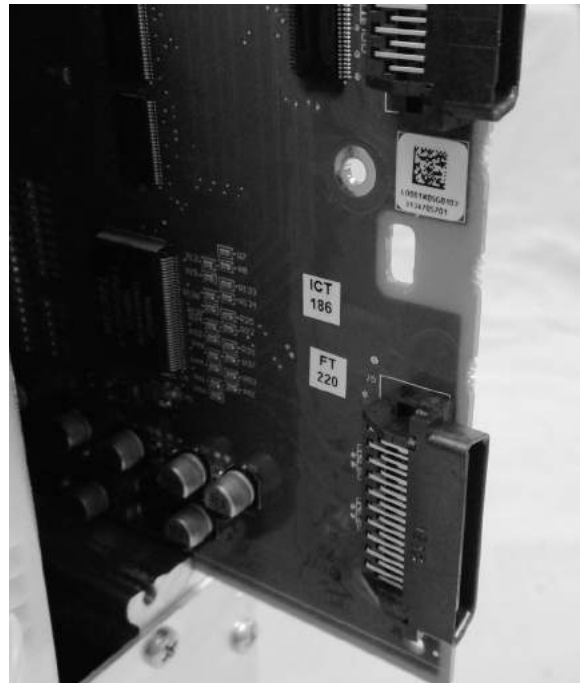


Figure 7. Hole in the base circuit board

11. Hook the support bar nib into the hole in the base circuit board (**Figure 8**) 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 9**).



Figure 8. Hooking the support bar nib into the hole in the base circuit board

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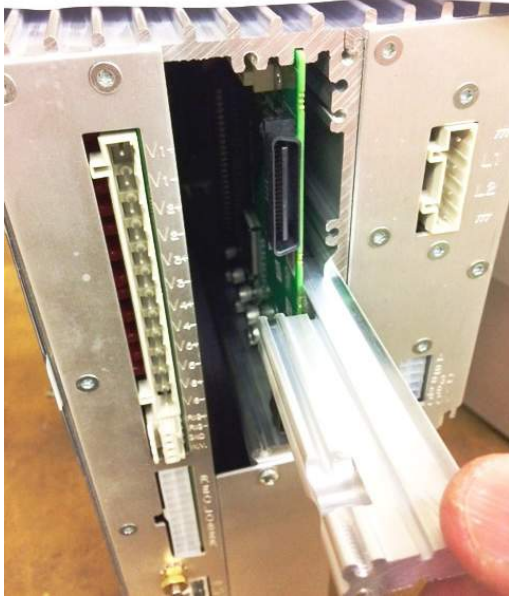


Figure 9. Pushing the base circuit board into the guide grooves

12. Push the communications base circuit board all the way in using the support bar and secure with the provided screw. See **Figure 10**.



Figure 10. Support bar fully inserted and secured with a screw

13. Install the communications module into the top communications module slot (Com Port 1) and secure with two of the #6-32 screws supplied with the kit. See **Figure 11** and **Figure 12**.

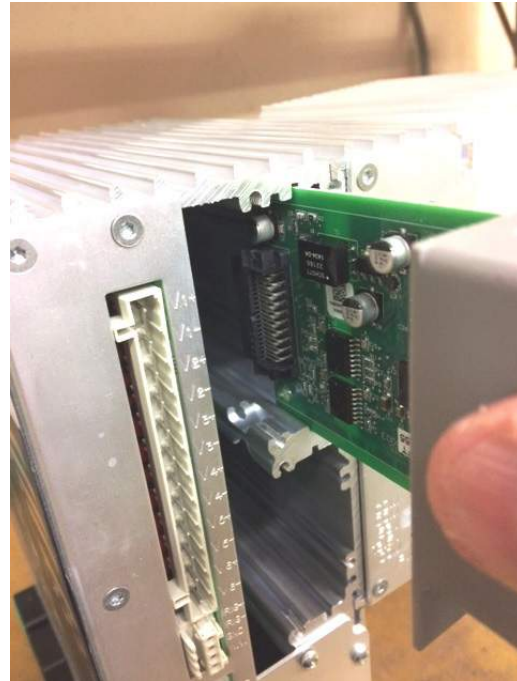


Figure 11. Inserting communication module into Com Port 1 communications slot



Figure 12. Communications module secured with screws

- A second communications module can be installed in the lower slot (Com Port 2) (**Figure 13**) or the supplied cover can be placed over the slot if it is not needed (**Figure 14**). Either the module or cover should be secured with two of the #6-32 screws supplied with the kit.



Figure 13. Two communications modules installed



Figure 14. One communications module installed with the other slot covered

Install module

CAUTION

Equipment misoperation. Do not connect this control to an energized recloser until all control settings have been properly programmed and verified. Refer to the programming information for this control. Failure to comply can result in control and recloser misoperation, equipment damage, and personal injury.

G110.3

- Align the bottom lip of the module with the lower edge of the swing panel.
- Position the ground link on the swing panel to line up with the ground lug on the module as it moves into position (**Figure 2**).
- Lift up on the module until the ground link slides into place and continue lifting up until the module is firmly back into the swing panel.
- Press into place as necessary.
- Slide the retaining bar down all the way over the module's aluminum extrusion as much as possible.
- Torque the three (3) nuts to 24 in-lbs (**Figure 1**).
- Torque the nuts on the ground link to 24 in-lbs.
- Reconnect all wire connections to the side of the module.
- Reconnect the battery (if used).
- Reconnect AC input power to TB1 or to AC input receptacle, if applicable.
- Verify the module powers up properly.
- Download the desired settings to the control.
- Verify control operation before returning to service. Refer to *MN280049EN*.
- Refer to *Service Information MN280086EN Form 4D Control Communications* for more information on the operation of the communications equipment and programming the control for communications.

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