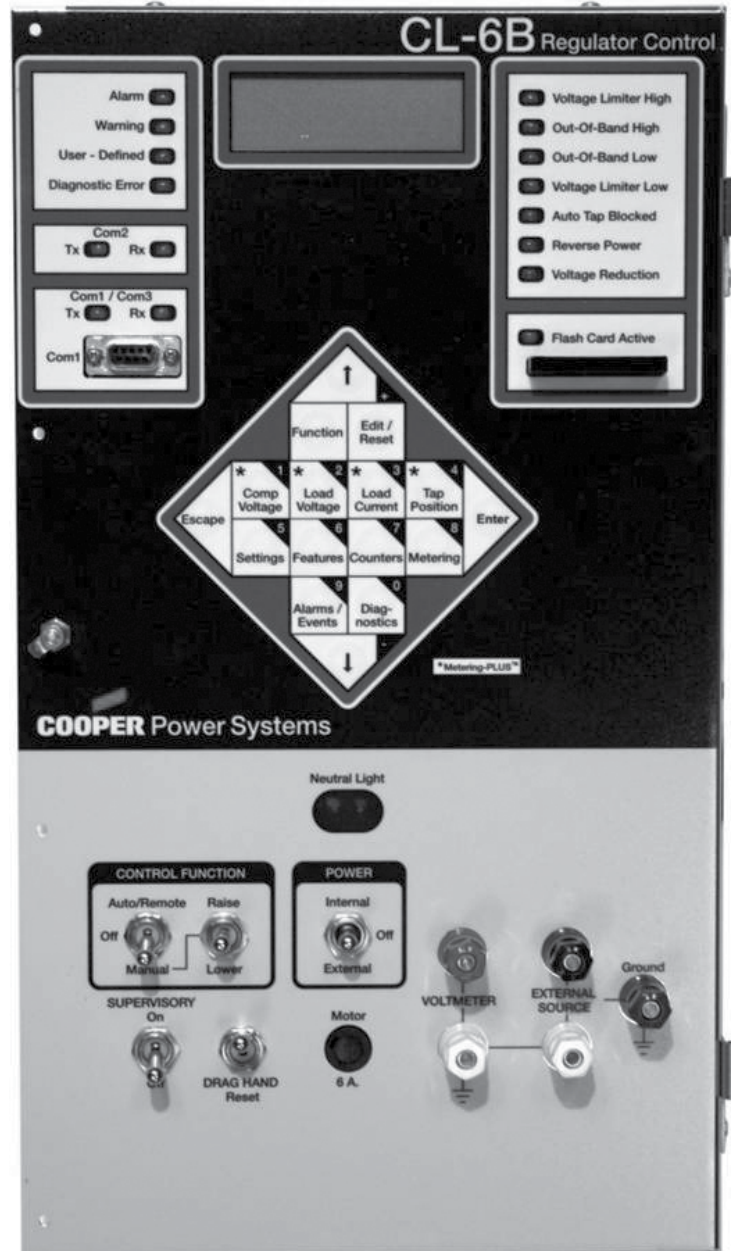


Upgrade instructions for CL-6 series control firmware



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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 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.

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.

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.

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.

Upgrade instructions for CL-6 series control firmware

Note: Please read this bulletin prior to updating firmware.

Upgrading firmware

Duty cycle monitor values

If your voltage regulator does not include a Quik-Drive™ tap-changer, proceed directly to the **Upgrade Instructions** in the next column. To determine the type of tap-changer in your unit, select FC 49 and verify it by noting the tap-changer type on nameplate.

Regulators that contain a Quik-Drive tap-changer and have been in service must have the Duty Cycle Monitor (DCM) information recorded and entered back into the control after the firmware upgrade.

To maintain the DCM values, the following steps must be performed prior to uploading the firmware.

1. Connect PC to CL-6 control using an RS-232 cable.
2. Open the ProView™ NXG software, and start communications with the control. For more information on connecting to the control view the section titled *Connecting to the CL-6 Series Control* in the software help files.
3. In ProView NXG software, select Display > Duty Cycle...
4. Write down the largest number in the percent-consumed column.
5. Select Settings > Configure Duty Cycle...
6. Write down the DCM Spec. Number displayed in the top line.
7. Follow the Firmware Upgrade Instructions in the next column and then complete the instructions below.

To maintain the DCM values, the following steps must be performed after uploading the firmware.

1. When the upgrade process is complete, again connect your PC to the CL-6 control and begin communicating.
2. In the ProView NXG software select Settings > Configure Duty Cycle...
3. Select the proper DCM Spec. Number from the drop-down menu in the second line and enter the Initial Level (%) recorded earlier.
4. Click on the Apply button in the DCM Configuration dialog box.
5. Click on the Refresh button and confirm that the DCM Spec. Number and Initial Level (%) values loaded properly. You can also check that the % consumed has loaded properly by checking FC 333 on the control display.

Upgrade instructions

1. **Download the latest firmware from www.cooperpowercentral.com directly onto a compact flash card into the root directory, and unzip the file.** Once the file is on a compact flash card, extract, or unzip it directly back to the root directory of the compact flash card. It is possible to download the file to your computer hard drive; however, do not unzip the file until after it is copied to a compact flash card.
2. **Insert the compact flash card and save the standard settings.** Insert the compact flash card and select FC 354. Press Enter, Enter and Enter to confirm. This will save the settings from the control to the compact flash card. Once this is complete, take note and write down the values displayed at FC 40, Regulator ID and the value at FC 0, Total Operations Counter. These values will be overwritten on a major firmware upgrade and must be reentered manually.
3. **Leave the compact flash card in the control and load the firmware.** To load the firmware: turn the power to the control off. While simultaneously holding down the Enter and Escape keys, turn the power back on. The LCD display will display "Bootloader v1.01" and "Erasing Block ...". You can now let go of the Enter and Escape keys. The Firmware is loading. This process takes approximately two minutes.
4. **Confirm firmware upgrade.** Once the firmware is loaded, you may have a Diagnostic Error and the Diagnostic Error LED may be lit; ignore this for now. Press the Escape key and enter FC 89 to show the firmware version; make sure that the upgrade took effect. If it has not loaded properly, go back to Step 3 and attempt the load again. If it still does not load properly, you may need to download and unzip the firmware file again.
5. **Load standard settings, Regulator ID and Total Operations Counter information back onto the control.** Enter the security code (default code is 32123) at FC 99. Reload the settings onto the control using FC 352. Enter the Regulator ID into the control using FC 40. Enter the Total Operations into the control using FC 0.
6. **Initiate a self-test to verify that the diagnostic errors clear.** Do this by pressing Function, 91, Enter, Enter, and Enter to confirm.
7. **Troubleshoot diagnostic errors messages displayed after the self-test.** Refer to Section 8: Troubleshooting of the document MN225016EN, *CL-6 Series Control Installation, Operation, and Maintenance Instructions*. If the control indicates PASS, the firmware upgrade is complete.

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