Installation and Operating Instructions

Part Number 33CN-FLOAD

GENERAL

The FieldLoader V3.0 software allows easy upgrades of the operating software for VAV and Fan Powered Air Terminal controllers (Part numbers 33ZCVAVTRM and 33ZCFANTRM), Fan Coil controllers (Part number 33ZCFANCOL), and PremierLink™ Rooftop controllers (Part number 33CSPREMLK).

The FieldLoader software is installed onto a portable laptop computer which can be taken to job sites where the air conditioning equipment is located. The FieldLoader software is Windows compatible.

The FieldLoader software also has the capability to download future upgrades of the operating software.

INSTALLATION

The FieldLoader V3.0 software is compatible with Network Service Tool IV V1.2, Building Supervisor IV V1.2, Comfort-VIEW™ 1.0 or 2.0, and ComfortWORKS® 5.0. All of these applications can be installed on the same computer.

> IMPORTANT: The FieldLoader software must be installed AFTER Service Tool or Building Supervisor. If Service Tool or Building Supervisor is installed after the FieldLoader software, then the FieldLoader software must be reinstalled.

The FieldLoader software is installed by executing the SETUP.EXE file on floppy disk 1. Once the SETUP.EXE file is executed, an automatic installation process will run. The user will need to specify their user name, company name, and a directory for the FieldLoader installation.

After the FieldLoader software is installed, the appropriate controller upgrade software must be installed. The upgrade software is downloaded from the CCN (Carrier Comfort Network) website. Software for each controller type must be downloaded individually. Refer to the Loading Upgrade Software section on this page.

System Requirements — The FieldLoader software requires the following hardware and operating system:

• 486 processor or better
• Minimum 640 x 480 screen resolution
• Microsoft Windows 95/98/ME™ or Windows 2000
• RS-485 interface (A B&B 485CARLP9A external converter is recommended for field use. A B&B 485CARLP9 converter will NOT work.)

Supported Controllers — The FieldLoader software allows the user to select the controller type for download from a pulldown list. FieldLoader is packaged with the following upgraded controller software:

• ComfortID VAV and Fan Powered Air Terminals V2.0 software (controller part numbers 33ZCVAVTRM and 33ZCFANTRM)
• Fan Coil V2.1 software (controller part number 33ZCFANCOL)
• PremierLink Rooftop V1.2 software (controller part number 33CSPREMLK)

Loading Upgrade Software — When additional software upgrades are released, the FileLoader utility is used to import the new software versions from the CCN website into the FieldLoader software. The new versions of the controller software are then used during subsequent upgrade procedures.

The FileLoader program is executed directly from the import disk of the new software version or from the files downloaded from the website. The new software version import disk or the files downloaded from the website will contain a FILELOADER.EXE file. The file will launch the FileLoader Upgrade Tool. See Fig. 1. Once the FileLoader upgrade tool has been launched, click on the UPGRADE button to import the new software version files into the FieldLoader software.

Software for each controller type must be downloaded and installed individually.

Fig. 1 — FileLoader Upgrade Tool

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| Book | 1 | 4 | PC 111 | Catalog No. 533-387 | Printed in U.S.A. | Form 33CN-5SI | Pg 1 | 1-02 | Replaces: New |
| Tab | 11a | 13a | | | | | | | |

OPERATION

The FieldLoader software allows easy upgrades across major version numbers for controllers that support this capability. Major version number changes are required when CCN tables within a controller are modified.

For example, a ComfortID™ controller can be upgraded from V1.6 to V2.0 without the need to reconfigure the controller database manually. The software inside the ComfortID controller senses the initial upgrade event and automatically reconfigures the ComfortID V1.x's serial EEPROM memory (where the database is stored) to accommodate the new version. The software enables a major version upgrade and does not require the user to reconfigure each individual ComfortID controller's CCN tables. Any configuration decisions that were not present in the earlier version will be set to their default values.

> IMPORTANT: The FieldLoader software ONLY updates the controller. The associated front end software which is installed at specific job sites (e.g.) Building Supervisor IV, Service Tool IV, ComfortWORKS® or ComfortVIEW™) will not be updated automatically to reflect the changes. In order to view the newly upgraded controllers, each controller will need to be removed and then reinstalled.

The upgrade procedure is forward only. If, for example, a user decides to revert back to ComfortID V1.6 from a ComfortID V2.0, the user-programmed configuration settings will be lost. It will be necessary to download a saved image of the V1.6 database from a front end application or reconfigure it manually.

The FieldLoader software MUST complete the download process prior to exiting the FieldLoader software. If a FieldLoader session is aborted (unexpected power failure, system crash), the controller may be left in an unrecoverable state. The FieldLoader software has been designed to recover controllers in these instances, but it may require a higher level of user interaction to determine the proper course of action. If a controller fails to communicate after an attempted upgrade, refer to the Troubleshooting section on page 3.

Upgrade Set Up Procedure — Prior to running the

FieldLoader software, it is important that the following steps be taken.

The computer running the FieldLoader software should be connected directly to the same bus as the controllers that are to be upgraded. Controllers cannot be upgraded through bridges. Connect the computer to the RS485 CCN bus using a B&B 485CARLP9A connector cable.

If on a secondary bus, the COMM2 connector should be removed from the CCN Bridge to isolate communications from the primary bus.

If B&B 485OP RS485 repeaters are installed on the bus, they must be powered down. Each bus segment must be upgraded individually. Attempting to download a controller through a 485OP repeater will cause a communications verification error message in the download status log. Due to the error, the controller will not be upgraded.

In order to maximize download speed when upgrading a ComfortID zoning system, it is recommended that the Linkage in each master ComfortID controller on the bus be disabled.

Due to conflicts with the serial port, Network Service Tool IV and Building Supervisor IV must be manually shutdown prior to running the FieldLoader software. The FieldLoader software will automatically stop and restart ComfortVIEW and ComfortWORKS Services.

NOTE: If a rooftop unit with PremierLink controls is being upgraded, a computer running the FieldLoader software must be connected directly to the unit. Disconnect the CCN bus from the unit while downloading. Additionally, DIP switch no. 1 on the PremierLink board must be in the CCN position (set to 1).

Communication Setup — When running the Field-

Loader software, the serial port is used for communication with the CCN. If any other system hardware device is using the serial port, an error will occur. Make sure no other devices are using the port. It is recommended that a B&B 485CARLP9A RS232 to RS485 converter be used.

Click on the SETUP button to access the FieldLoader Communications Setup screen. See Fig. 2. Select the proper communications port for CCN communications. Select the proper CCN baud rate. Specify the element number and bus number of the computer with the FieldLoader software.

NOTE: The computer with the FieldLoader software must reside on the same bus as the devices to be downloaded. The FieldLoader PC bus number must be set to the proper bus address prior to upgrading any controller.

Upgrading Controllers — To perform controller up-

grades, the user must first select the desired device type and version of the controller. The Device Type and Version pulldown menus can be used to select all controller types and versions that are currently imported into FieldLoader. You must first select the desired Device Type and then select the desired Version. See Fig. 3.

Select the desired address range to upgrade. The FieldLoader software has the capability to upgrade an individual controller or a range of controllers on a single bus. A range of addresses can be upgraded by configuring the Start Element and End Element dialog boxes, See Fig. 3. Make sure that the proper bus number is displayed above the Start and End Elements. If the proper bus number is not shown, then use the SETUP button to configure the proper bus number.

Once the proper Start and End Element numbers have been entered, press the REFRESH button in order to scan the element range entered. The scan will display all controllers found in the specified element range. Verify that the controllers found are the correct types and versions. Press the CONTINUE button to begin the upgrade process. A progress update will be displayed on the screen as the update occurs. Success and error messages will be displayed in the download log, which can be viewed by using the MORE button on the download progress screen. See Fig. 4.

If a blank device (a device in BootLoader mode) is found within the Start/End address range, it will be skipped. The user must upgrade a BootLoader device individually. To upgrade a single device, enter the address of the device into both the Start Element and End Element dialog boxes.

NOTE: A BootLoader device is a controller which has had its application software removed and is no longer functioning as a CCN controller.
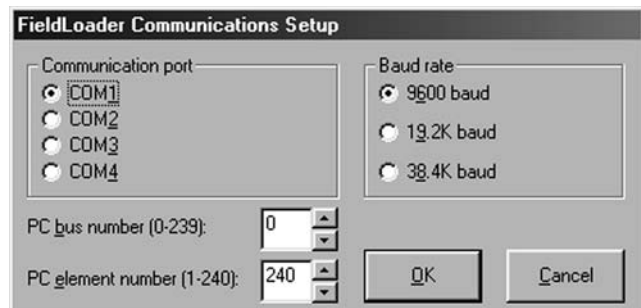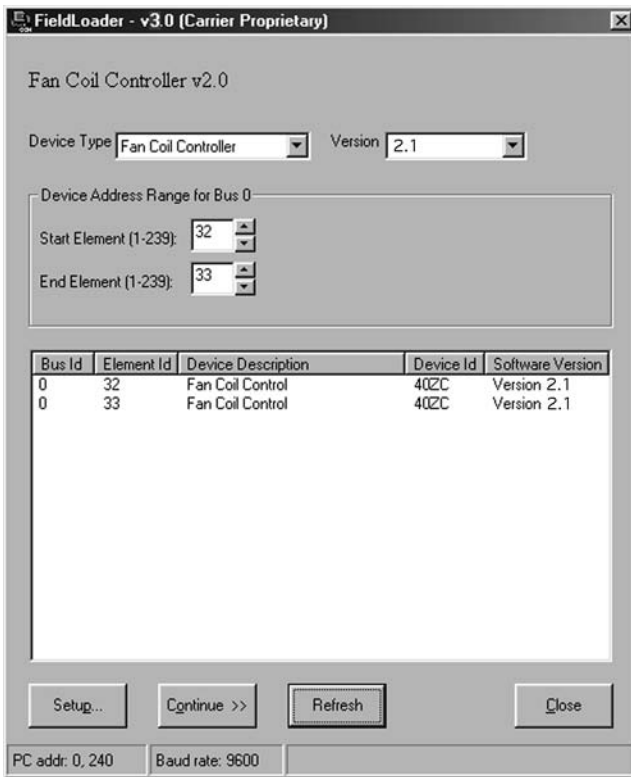

Fig. 2 — FieldLoader Communications Setup

**Fig. 3 — FieldLoader Upgrade Screen
(Fan Coil Controller Shown)**

Fig. 4 — FieldLoader Download Screen

Once the download is complete, the MORE button on the screen can by utilized to view the current download log. See Fig. 5. Also, after upgrading the controllers, the download log can be saved as a text file (this is optional).

NOTE: When the download log is being displayed, the LESS button can be used to deactivate the viewing of the log.

The download log should always be checked after each download to ensure that the download completed successfully. A "Download Completed Successfully" message should be displayed for each controller that has been properly upgraded.

The download log contains useful information that can be utilized in the event of a download failure. Unsuccessful downloads will display the reason the download failed. Failure messages include: "unable to verify software version," "unable to communicate to controller," and "checksum failure." More information regarding error messages is given in the Troubleshooting section on this page.

TROUBLESHOOTING

FieldLoader Software Setup Error Messages —
The following error messages will occur when the FieldLoader software is not set up correctly.

"CANNOT CONNECT TO COMM PORT — ERROR CODE N" OR "XYZ DEVICE NOT RESPONDING" — These errors usually mean that the Communication port selected in the FieldLoader Setup window is invalid, or is conflicting with another device or application. If the port is not available, the error would occur when the FieldLoader software starts or after selecting an invalid port in the Setup window. If a hardware or software conflict exists, the error usually occurs just before a download begins.

Possible Solutions:

Verify that the correct Communication port is selected in the FieldLoader Setup panel.

Verify that the serial port is enabled in the System Control Panel, and does not conflict with any other installed hardware device (modem, laptop infrared port, etc.).

Shut down any other program that may be using the same Communication port, such as Building Supervisor IV or Network Service Tool IV.

Verify that the port is accessible using Windows Hyper-Terminal.

"FIELDLOADER CANNOT FIND PRODUCT FILE(S) — PLEASE INSTALL" — This error means that the FieldLoader software could not find the download command file script (.CMD file) to be used for downloading to the devices. This file is installed by the FileLoader utility found on the application software import disk.

Possible Solutions:

Run FileLoader to copy the .CMD file and application software to the PC. Verify that a file with the correct part number and .CMD extension exists in the FieldLoader directory.

Fig. 5 — Sample Download Log

Download Error Messages —
The following errors may occur during upgrade download operations.

"END ELEMENT MUST BE GREATER THAN START ELEMENT" — The address range defined on the main FieldLoader screen is invalid. Verify that the start element address is less than or equal to the end element address.

"INVALID COMMAND FILE. ERROR IN LINE" — The download command file script contains an error or illegal command. Reinstall the upgrade files using the FileLoader software.

"CANNOT VERIFY DEVICE TYPE: CONTINUE DOWNLOAD?" — The software reference number did not match, but the BootLoader part number did match, indicating that the device is in BootLoader mode. This is probably caused by a failure on a previous download attempt. The user must verify that the download to this device should continue.

"DOWNLOAD CANCELLED: CONTINUE WITH NEXT ELEMENT?" — This message appears when the user terminates the download by using the Cancel button. The download will continue with the next element if the user answers Yes to this message.

Download Log Error Messages —
The following error messages may occur in the download log file.

"READ SOFTWARE PART NUMBER FAILED" — The FieldLoader software could not read the part number of the target device. It is likely that the FieldLoader software could not communicate with the CCN address it was attempting to upgrade. The user must verify the controller at the specified address is connected to the CCN bus properly.

"DOWNLOADING FILE FAILED — SOFTWARE REVISION NOT VERIFIED" — The software reference number did not match the selected Device Type. Two possible solutions exist. First, the user may be attempting to download the wrong device type into the controller selected (for example, the ComfortID™ Air Terminal Device Type may have been selected and the software is downloading into a Fan Coil Controller). Second, the controller may be in BootLoader mode. The user must download to the controller directly by specifying a single address in the Start and End Element numbers.

When downloading fails because of an incorrect part number, messages such as "CESR131211-08 — MISMATCH" will be displayed in the download log. These mismatches indicate that the Fieldloader software attempted to check each part number listed against the actual target device and the part numbers did not match.

"CHECKSUM VERIFICATION FAILED" — After downloading, the FieldLoader software verifies the integrity of the upgrade within the newly upgraded controller. In the event of a checksum failure, the controller should be immediately redownloaded with the upgrade software. A "CHECKSUM MATCH — SUCCESS" message should be displayed in the download log. If a checksum failure error message persists, contact Carrier.

Download Failure When Upgrading —
If a controller upgrade is attempted and a download failure occurs, then the following steps must be taken.

1. Disconnect the CCN bus from the controller.
2. Connect the computer running the FieldLoader software directly to the controller. The controller will be at its original address and baud rate.
3. Use FieldLoader to upgrade the individual controller.
4. Reconnect the CCN bus to the controller.

Erratic Mouse Operation —
If the computer is experiencing non-smooth operation of the mouse during 38.4 kb CCN communications with FieldLoader, ComfortVIEW or Network Service Tool, the following procedure can be done to fix the problem.

1. The behavior of the CCN communication driver can be changed by editing the Autoexec.bat file of the computer.
2. Use an editor (such as Notepad) to open the file C:\Autoexec.bat.
3. Insert the following line at the top of the file:
   SET CCNWAIT=0
4. Save the file and exit.
5. Re-boot the computer.

NOTE: For some computers, this alteration may cause the FieldLoader software to be unable to download. In that case, change the line in the Autoexec.bat file back to:
   SET CCNWAIT=1.