



## Flash Firmware Kit

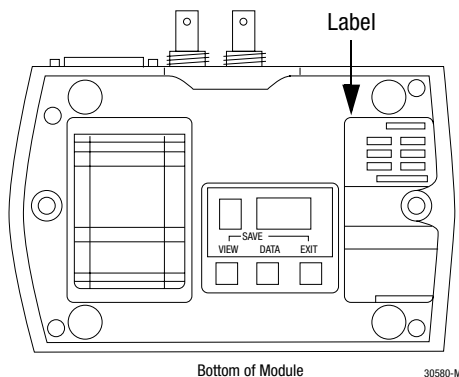
Catalog Number F1770-KFC(D)15

### What's in These Installation Instructions?

These installation instructions describe how to upgrade the 1770-KFC and 1770-KFCD ControlNet™ RS-232 Interface Module firmware from ControlNet phase 1.25 to phase 1.5.

**Important:** A qualified service technician must perform the firmware upgrade procedure.

The upgrade procedures apply to the 1770-KFC and 1770-KFCD modules listed below. You can find the series and revision on the product ID label on the bottom of the module as shown in the figure to the left.



- 1770-KFC, series A, revision A (non-CE module)
- 1770-KFC, series B, revision A (CE module)
- 1770-KFCD, series A, revision A (CE module)

### Before You Begin

**Important:** The 1770-KFC series A requires a factory hardware modification before it can be upgraded. If it has been modified, you will see “1770-KFCD Phase 1.5” on the label. If you have a series A module that needs to be modified, exchange it through the Allen-Bradley parts hub through your local sales office.

### What the Kit Contains

The 1770-KFC and 1770-KFCD firmware upgrade kit includes:

- one jumper
- one disk with flash utilities and binary files
- one patch label
- these Flash Firmware Kit Installation Instructions

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## What You Must Provide

You must provide the following two pieces of hardware for this upgrade:

- A 386 (or better) IBM-compatible PC booted in DOS 6.22 or later.



**ATTENTION:** Do not run this utility from Microsoft® Windows 95® or Windows NT™ in the DOS window while operating Windows 95 or Windows NT.

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You can run the flash upgrade tool from the disk or from your PC's hard drive.

- A serial cable to connect your computer's COM port to the module, such as:
  - 1784-CP10 (9 pin to 25 pin)
  - 1784-CP11 (25 pin to 25 pin)

Both cables require a female-to-female gender changer.

## Prepare the Module

The 1770-KFC and the 1770-KFCD firmware are comprised of a boot section and an executive (main code) section. You must first upgrade the executive section and then the boot section.

### Install the Jumper



**ATTENTION:** Disconnect power before opening the module. A qualified service technician must perform the upgrade procedure.

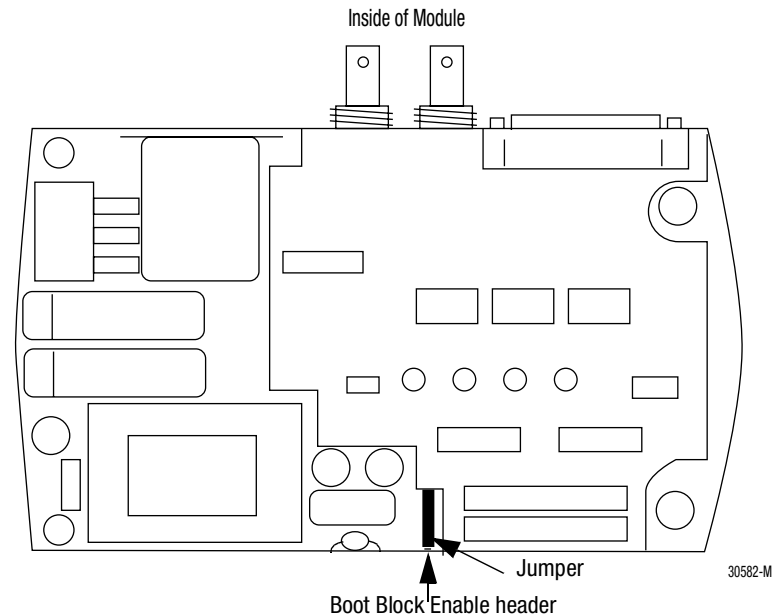
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**ATTENTION:** Circuit boards are highly sensitive to electrostatic discharge (ESD). Handling a circuit board without ESD protection can cause serious damage that might not be apparent during installation or initial use. To guard against ESD damage, before handling the module, put on a grounding wrist-strap and touch a grounding object to discharge any built-up static charge.

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1. Carefully remove the cover by removing the four screws on the bottom of the module.
2. Enable the boot section by installing the jumper onto the Boot Block Enable header. The Boot Block Enable header is located on the main printed circuit board inside the module as shown below.



Now that the jumper is installed, you will not need to remove it during the life of the module.

3. Replace the cover and four screws.
4. Connect the module to either available COM port of your computer.

**Important:** Do not connect the module to the ControlNet network. (Do not make connections to BNC or NAP ports).

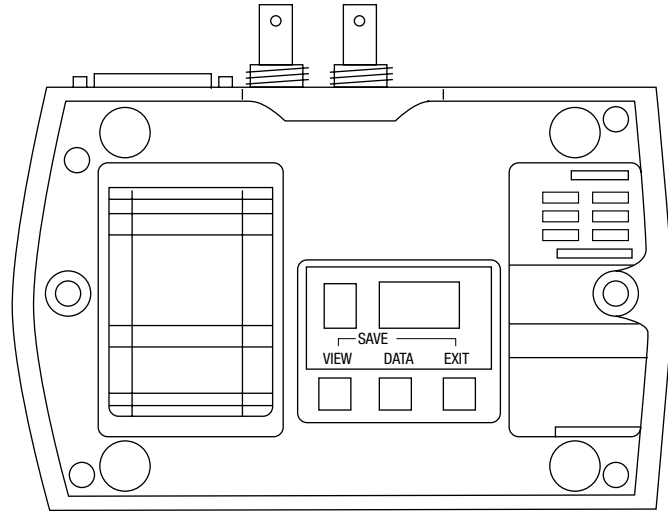
5. Connect the AC or DC power cord and apply power.

Next you will reset the module parameters.

## Reset Module Parameters

**Important:** Before you reset the parameters, make sure you record any configuration information stored in the module.

1. Find the **View**, **Data**, and **Exit** buttons on the bottom of the module as shown below.



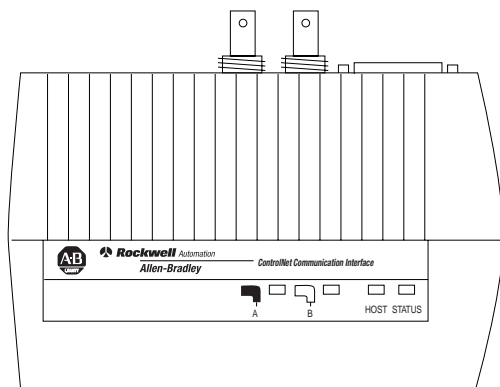
Bottom of Module

30580-M

2. Press **View** and **Data** simultaneously to reset the module to factory default values.
3. Set the baud rate to 38.4K as follows:
  - a. Press the **View** button until Parameter 2 displays.
  - b. Press the **Data** button until 38 displays.
4. Save the settings by simultaneously pressing **View** and **Exit**.

**Important:** If your computer's serial port cannot run at a baud rate of 38.4K, then change the module's baud rate (parameter #2) accordingly.

5. Connect the COM card of your computer to the module.
6. Check the STATUS LED on the front of the module as shown in the figure to the left. It should be solid green. The Channel A status indicator LED should be flashing red. If the module is not behaving in this manner, call Technical Support at 440-646-6800.



Front of Module

30579-M

7. Check your model number. If it is a:
  - 1770-KFC, go to the next section, "Upgrade the 1770-KFC Firmware".
  - 1770-KFCD, go to page 6, "Upgrade the 1770-KFCD Firmware".

## Upgrade the 1770-KFC Firmware

**Important:** You cannot upgrade 1770-KFC firmware using 1770-KFCD binary files. Mixing binary files between firmware can make the product inoperable.

To upgrade the 1770-KFC:

1. Flash the main code by entering the following information at the DOS prompt:

```
DLOAD KFC15.BIN COM1 38
```

- COM1 indicates which serial port you are using
- 38 indicates a 38.4K baud rate

Change these settings, if necessary, based on your computer's serial port and baud rate.

You see this screen:

<b>KFC flash memory download utility - Version 0.8 Copyright 1994 by the Allen-Bradley Company</b>
Succeeded Opening binary image file 'KFC15.BIN' to download -----△-----Downloading binary image to KFC flash memory

Look at the front of the module. The HOST LED blinks green, the A LED blinks red, the B LED is off, and the STATUS LED is solid green during the download.

When the download is complete, you see the following message:

```
Code Download into KFC Flash Memory Succeeded
```

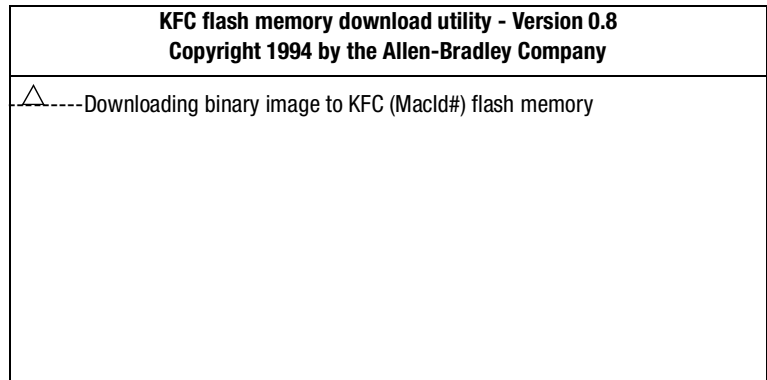
If you see an error message, go to the troubleshooting section on page 9.

2. At the prompt, enter the following command:

```
DLOAD2 BOOT15.BIN COM1 38 0
```

Change the COM port and baud rate if necessary, based on your computer's serial port and baud rate.

You see this screen:



Look at the front of the module. The HOST LED blinks green and the STATUS LED blinks red during the download.

When the download is complete, you see the following message:

```
Code Download into KFC Flash Memory Succeeded
```

If you see the message:

```
NVS transfer failure. Download aborted
```

go to the troubleshooting section on page 9.

If the upgrade:

- progressed as outlined in this section, go to the section “Place the Label” on page 8 to continue with the upgrade.
- did not progress as outlined in this section, go to the troubleshooting section on page 9.

## Upgrade the 1770-KFCD Firmware

**Important:** You cannot upgrade 1770-KFCD firmware using 1770-KFC binary files. Mixing binary files between firmware can make the product inoperable.

To upgrade the 1770-KFCD:

1. Flash the main code by entering the following information at the DOS prompt:

```
DLOAD KFCD15.BIN COM1 38
```

- COM1 indicates which serial port you are using
- 38 indicates a 38.4K baud rate

Change these settings, if necessary, based on your computer’s serial port and baud rate.

You see this screen:

```
KFC flash memory download utility - Version 0.8  
Copyright 1994 by the Allen-Bradley Company  
Succeeded Opening binary image file 'KFC15D.BIN' to download  
-----△-----Downloading binary image to KFC flash memory
```

Look at the front of the module. The HOST LED blinks green, the A LED blinks red, the B LED is off, and the STATUS LED is solid green during the download.

When the download is complete, you see the following message:

```
Code Download into KFC Flash Memory Succeeded
```

If you see an error message, go to the troubleshooting section on page 9.

2. At the prompt, enter the following command:

```
DLOAD2 BOOTD15.BIN COM1 38 0
```

Change the COM port and baud rate if necessary, based on your computer's serial port and baud rate.

You see this screen:

```
KFC flash memory download utility - Version 0.8  
Copyright 1994 by the Allen-Bradley Company  
-----△-----Downloading binary image to KFC (MacId#) flash memory
```

Look at the front of the module. The HOST LED blinks green and the STATUS LED blinks red during the download.

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When the download is complete, you see the following message:

Code Download into KFCD Flash Memory Succeeded

If you see the message:

NVS transfer failure. Download aborted

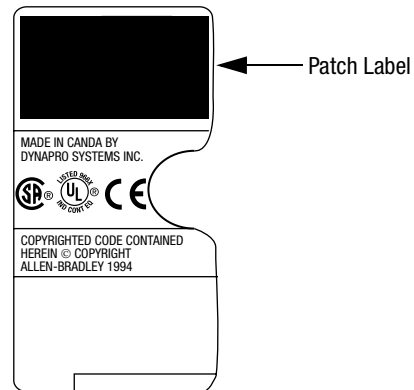
go to the troubleshooting section on page 9.

If the upgrade:

- progressed as outlined in this section, go to the next section, “Place the Label”, to continue with the upgrade.
- did not progress as outlined in this section, go to the troubleshooting section on page 9.

## Place the Label

To indicate the module has been upgraded to phase 1.5 firmware, place the patch label as shown. The illustration indicates where the label should be placed. It is not an illustration of what the label looks like.



40937

**Important:** Placing the new label on the module is very important because the model number is now different. If the label is not properly updated, the module could be improperly repaired or replaced.



## Troubleshoot the 1770-KFC or 1770-KFCD Module

This section helps you diagnose and solve operational problems when you upgrade phase 1.25 firmware to phase 1.5.

If this happens:	Do this:
The downloading fails.	Make sure you are following the correct upgrade procedure for the correct module.
DLOAD2 fails.	<ul style="list-style-type: none"> <li>• Check to make sure that the baud rate on the module matches the baud rate on the computer.</li> <li>• Turn the module off and then back on. Then try the download again.</li> <li>• Use DLOAD to download the executive (main code) section first before using DLOAD2 to download the boot section.</li> </ul>
A boot firmware upgrade (BOOT15.BIN or BOOTD15.BIN) was interrupted or failed.	<ul style="list-style-type: none"> <li>• Turn the module off and then back on, or send a Device Object Reset. Then try the download again.</li> <li>• Check to make sure the baud rate on the module matches the baud rate on the computer.</li> <li>• Check to make sure that the module has the Boot Block Enable jumper installed. If you have a 1770-KFC series A, revision A module, it does not have a header inside to install the jumper. Send your module to Dynapro for a hardware modification.</li> </ul>
The module does not appear to have a header inside to install the Boot Block Enable jumper.	<ul style="list-style-type: none"> <li>• Your module may already have undergone a hardware modification that enabled the boot section. Make sure that the module is properly labeled to indicate that a hardware modification has been completed. Continue as if the jumper is in place.</li> <li>• Check to see if you have a 1770-KFC series A, revision A module. This module does not have a header inside to install the jumper. Send it to the service hub for a hardware modification.</li> </ul>
An executive (main code) firmware upgrade (KFC.BIN or KFC15BIN) was interrupted or failed.	<p>Turn the module off and then back on, or send a Device Object Reset. The module powers up and indicates an error code 2. This means that the boot section is still executing and the executive firmware is not downloading. The boot code is now waiting for a firmware download of the executive.</p> <p>If the boot section is phase 1.25, then use DLOAD to download the executive. If the boot section is phase 1.5, then use DLOAD2 to download the executive.</p>

If this happens:	Do this:
The module powers up and is stuck on error code 2.	The boot section is still executing and the executive firmware is not downloading. The boot code is now waiting for a firmware download of the executive section. If the boot section is phase 1.25, then use DLOAD to download the executive section. If the boot section is phase 1.5, then use DLOAD2 to download the executive section.

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