



## 20-COMM-H RS485 HVAC Adapter Firmware Revision 2.009

This release note describes major revision 2, minor revision 9 of firmware for 20-COMM-H RS485 HVAC adapters.

### Introduction

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### Enhancements

This section describes enhancements provided in this revision of firmware.

- Added support for PowerFlex 750-Series drives (PowerFlex 753 and PowerFlex 755) in all three modes of operation (Modbus RTU, FLN P1, and Metasys N2) **with the following limitations:**
  - Does not support Chinese, Japanese, and Korean languages.
  - Cannot access drive DPI port 7 and higher.
- Added support for PowerFlex 700VC drives in all three modes of operation (Modbus RTU, FLN P1, and Metasys N2).
- Added new **Parameter 33 - [RTU Memory Map]**. This parameter sets the register mapping that the adapter uses when the adapter operates in the 'Modbus RTU' mode. The settings for this parameter are:
  - '0' (Legacy), the default setting, which provides Modbus register mapping that conforms to the Modbus standard specification, which is typically used by PowerFlex 7-Class drives.
  - '1' (PF4-Class) which provides Modbus register mapping that matches the register mapping used by PowerFlex 4-Class drives. This mapping reduces the programming time required for PowerFlex 7-Class drives when they are used on a network consisting mainly of PowerFlex 4-Class. For details of this register mapping, see Appendix C in the PowerFlex 4 Drive User Manual, publication 22A-UM001.

**Important:** The register mapping provided with setting '1' does not pass configured Datalinks through the adapter. Therefore, they are ignored.













## Corrected Anomalies

There are no anomalies corrected in this revision of firmware.


## Determining Firmware Revision

This section describes procedures to determine the firmware revision of your 20-COMM-H RS485 HVAC adapter.

### Using the LCD HIM

| Step  | Example Screens   |
|---|---|
| 1. In the Main Menu, press the  or  key to scroll to <b>Device Select</b> .       | <pre> F-&gt;   Stopped     Auto ----- ----- -----       0.0        Hz ----- ----- ----- Main Menu: Parameter <b>Device Select</b> Memory Storage                     </pre> |
| 2. Press the  (Enter) key to enter this selection.   | <pre> F-&gt;   Stopped     Auto ----- ----- ----- Port 5: 20-COMM-H Main Menu: <b>Diagnostics</b> Parameter Device Select                     </pre>                        |
| 3. Press the  or  key to scroll to the <b>20-COMM-H</b> adapter.                  | <pre> F-&gt;   Stopped     Auto ----- ----- ----- Port 5: 20-COMM-H Main Menu: <b>Diagnostics</b> Parameter Device Select                     </pre>                        |
| 4. Press the  (Enter) key to display the adapter Main Menu.  | <pre> F-&gt;   Stopped     Auto ----- ----- ----- Port 5: 20-COMM-H Diagnostics: Events Device Items <b>Device Version</b>                     </pre>                       |
| 5. In the adapter Main Menu, press the  or  key to scroll to <b>Diagnostics</b> . | <pre> F-&gt;   Stopped     Auto ----- ----- ----- Port 5: 20-COMM-H Diagnostics: Events Device Items <b>Device Version</b>                     </pre>                       |
| 6. Press the  (Enter) key to enter this selection.   | <pre> F-&gt;   Stopped     Auto ----- ----- ----- Port 5: 20-COMM-H Diagnostics: Events Device Items <b>Device Version</b>                     </pre>                       |
| 7. Press the  or  key to scroll to <b>Device Version</b> .                    | <pre> F-&gt;   Stopped     Auto ----- ----- ----- Port 5: 20-COMM-H ▲Prev ▼Next 20-COMM-H  FW: 2.008 HW: A Date: 4/02/2010                     </pre>                       |
| 8. Press the  (Enter) key to display the Product Data screen.  | <pre> F-&gt;   Stopped     Auto ----- ----- ----- Port 5: 20-COMM-H ▲Prev ▼Next 20-COMM-H  FW: 2.008 HW: A Date: 4/02/2010                     </pre>                       |

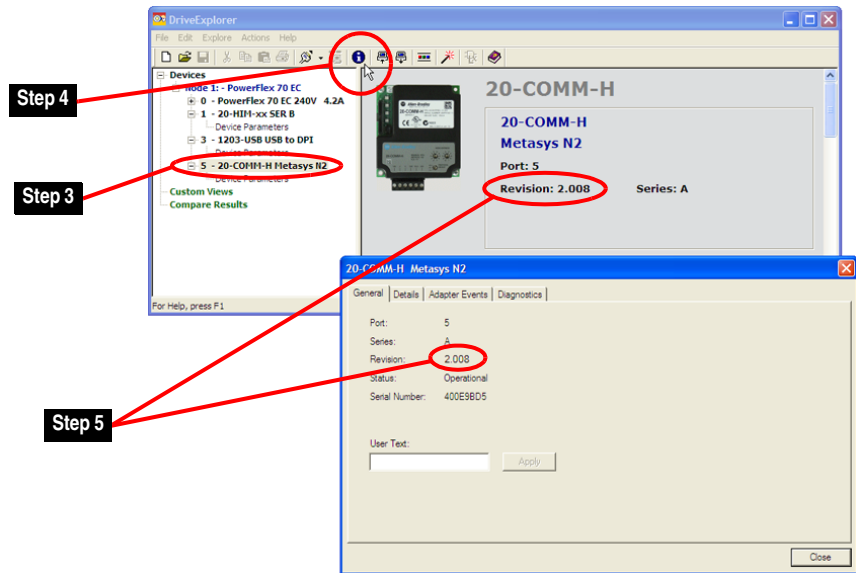
### Using DriveExplorer Lite/Full Software

1. Launch DriveExplorer software.
2. Using a 1203-USB or 1203-SSS converter, go online with the drive that is connected to the adapter.
3. In the DriveExplorer treeview, select the 20-COMM-H Modbus RTU adapter (see [Figure 1](#)).
4. Click the information icon  to display the adapter Properties screen.
5. The 'Revision' field shows the present revision of the adapter firmware (for example, 2.008).



**TIP:** When selecting the 20-COMM-H adapter using DriveExplorer Lite or Full software, version 5.01 or later, the adapter firmware revision is also shown in the right pane of the DriveExplorer window.

Figure 1 DriveExplorer Window with Information Icon and Device Properties



## Using DriveExecutive Software


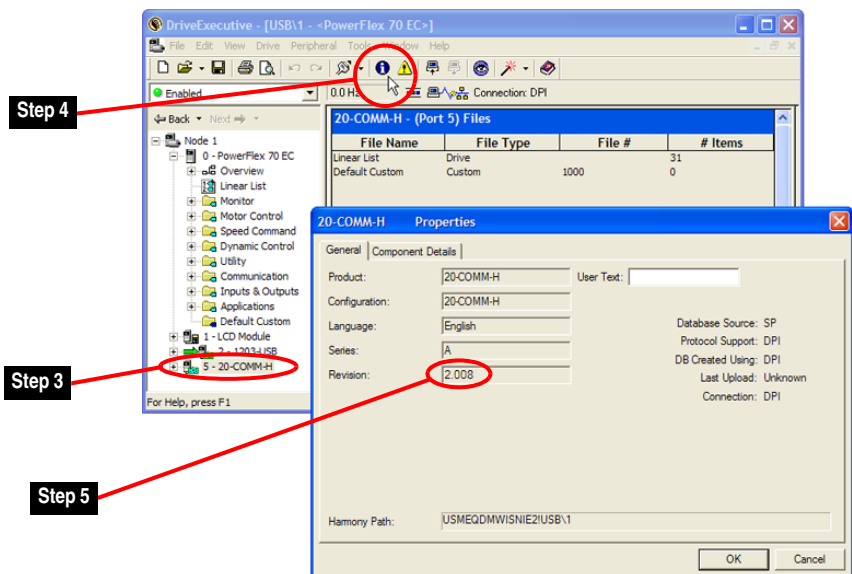
1. Launch DriveExecutive software.
2. Using a 1203-USB or 1203-SSS converter, go online with the drive that is connected to the adapter.
3. In the DriveExecutive treeview, select the 20-COMM-H adapter (see [Figure 2](#)).
4. Click the information icon  to display the adapter Properties screen.
5. The 'Revision' field shows the present revision of the adapter firmware (for example, 2.008).

Figure 2 DriveExecutive Window with Information Icon and Device Properties



## Updating the Firmware

This section describes procedures to update the adapter firmware. Flash kits for drives, communication adapters, and peripherals are provided on the Allen-Bradley Web Updates site at <http://www.ab.com/support/abdrives/webupdate>. Updating can be performed using a 1203-USB or 1203-SSS converter. For information about how to connect to your drive, see their respective User Manual. They can be viewed/downloaded on the Literature Library website at <http://www.literature.rockwellautomation.com>.




**ATTENTION:** Risk of permanent equipment damage exists. Once an update has been started, do not remove power from the drive until after the download has completed and the adapter MOD status indicator starts flashing green. If power is removed before this occurs, the adapter may be permanently damaged. An adapter that has been damaged in this way cannot be repaired.

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### Installing the Flash Kit

1. Go to the Allen-Bradley Web Updates site at <http://www.ab.com/support/abdrives/webupdate> and install the flash kit for the 20-COMM-H adapter, which also automatically installs the ControlFLASH software on your computer.
2. You are now ready to use DriveExplorer, DriveExecutive, ControlFLASH or HyperTerminal software to update the adapter. See the respective section below and follow the instructions.


### Using DriveExplorer Lite/Full Software to Update Firmware

1. With the Flash Kit installed (see [Installing the Flash Kit](#)), launch DriveExplorer software.
2. Using a 1203-USB or 1203-SSS converter, go online with the drive that is connected to the adapter.
3. In the DriveExplorer treeview, select the 20-COMM-H adapter.
4. Click the information icon  (see [Figure 1](#)) to display the adapter Properties screen.
5. On the 20-COMM-H Properties screen, click the Details tab.

**Important:** This update may cause the adapter parameters to revert to their default values. You may want to save your configuration using DriveExplorer software or the HIM CopyCat feature before updating.

6. Click Flash Update to start the update.
7. Select '2.009.xx' from the list of available updates.
8. Click Next >.
9. Follow the remaining screen prompts until the update procedure completes and displays the new firmware revision 2.009.

## Using DriveExecutive Software to Update Firmware

1. With the Flash Kit installed (see [Installing the Flash Kit](#)), launch DriveExecutive software.
2. Using a 1203-USB or 1203-SSS converter, go online with the drive that is connected to the adapter.
3. In the DriveExecutive treeview, select the 20-COMM-H adapter.
4. Click the information icon  (see [Figure 2](#)) to display the adapter Properties screen.
5. On the 20-COMM-H Properties screen, click the Component Details tab.

**Important:** This update may cause the adapter parameters to revert to their default values. You may want to save your configuration using DriveExecutive software or the HIM CopyCat feature before updating.

6. Click Flash Update to start the update.
7. Select the 20-COMM-H from the list of available devices.
8. Click Next >.
9. Select '2.009.xx' from the list of available updates.
10. Click Next >.
11. Follow the remaining screen prompts until the update procedure completes and displays the new firmware revision 2.009.

## Using ControlFLASH Software to Update Firmware

1. With the Flash Kit installed (see [Installing the Flash Kit on page 4](#)), choose Start > (All) Programs > Flash Programming Tools > ControlFLASH to launch the ControlFLASH software.
2. On the ControlFLASH Welcome screen, click Next >.
3. Choose the appropriate 20-COMM-H update from the list of available updates for the mode (RTU, N2 or FLN P1) in which the adapter is set.
4. Click Next >.

**Important:** This update may cause the adapter parameters to revert to their default values. You may want to save your configuration using the HIM CopyCat feature, or DriveExplorer or DriveExecutive software before updating.

5. Expand the treeview for the communication path you are using, and select the drive icon that represents the drive with the 20-COMM-H adapter you are updating.
6. Click OK.
7. If the Multiple Assemblies Found window appears, select 'Port X - 20-COMM-H' from the list and click OK. If this window does not appear, proceed with step 8.

8. With the Firmware Revision window displayed, select '2.009.xx' from the list of available updates.
9. Click Next >.
10. Follow the remaining screen prompts until the update procedure completes and displays the new firmware revision 2.009.

### Using HyperTerminal Software to Update Firmware

1. With the Flash Kit installed (see [Installing the Flash Kit on page 4](#)), launch HyperTerminal software.
2. Using a 1203-USB or 1203-SSS converter, go online with the drive that is connected to the adapter.
3. Set the adapter network protocol rotary switch to either the 'N2' or 'P1' position before proceeding.

**Important:** If the 'N2' or 'P1' setting is different from what the adapter switch was previous set to, you must power cycle the drive.

4. Press Enter until the main menu appears.

```
Main Menu - Enter Number for Selection
1> Display Setup Parameters
2> Display Event Queue
3> Flash Upgrade
```

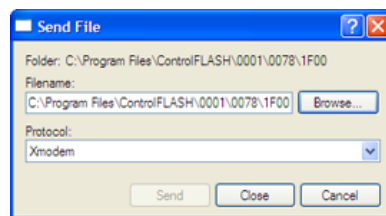
5. In the main menu, press '3' to flash upgrade.
6. Press the number key that corresponds to the '20-COMM-H' in the list.
7. Press 'Y' (for Yes) to update the firmware.

The terminal program will start displaying the letter 'C'. This signals the Xmodem protocol that the download may proceed. You then have one minute to start the transfer.



**ATTENTION:** Risk of injury or equipment damage exists. When you perform an update, the drive will fault if it is receiving control I/O from the adapter. Verify that the drive has stopped safely or is receiving control I/O from an alternate source before beginning an update.

8. From the Transfer menu, choose Send File to display the Send File screen.



- a. Click Browse.
- b. Navigate to the flash file located in C:\Program Files\ControlFLASH\0001\0078\1F00.

c. In the Select File to Send window list, select the '20-COMM-H\_2\_009\_03\_AppV2\_N2P1\_NewHdr.bin' file.

d. Click Open.

This file name now appears in the Filename box in the Send File screen.

e. From the Protocol pull-down menu, choose 'Xmodem'.

f. Click Send.

A dialog box appears and reports the update progress. When complete, a 'Flash Complete' message appears. Press any key to continue.

**Important:** Keep the adapter powered for 15 seconds after the operation has completed or until the adapter MOD status indicator starts flashing green.



**TIP:** To cancel the flash update at any time, press Ctrl-X.

9. Repeat steps 4 through 8 for the '20-COMM-H\_2\_009\_05\_CombosNewHdr.bin' file.

10. Repeat steps 4 through 8 for the '20-COMM-H\_2\_001\_02\_BootNewHdrV2.bin' file.

11. After the firmware update successfully completes, set the adapter network protocol rotary switch to the desired mode (RTU, N2 or P1) in which you want to operate the adapter.

**Important:** Changing to a new rotary switch position requires you to power cycle the drive.

12. Press Enter to return to the main menu.

## Restrictions

For PowerFlex 753 and PowerFlex 755 Drives, these restrictions apply:

- The Reference and Feedback words are internally scaled 1:32 to allow a range of 0 to 650.00 Hz.
- 32-bit floating point parameters are mapped as follows:
  - Datalinks are mapped as Little Endian (that is, Low/High word ordering).
  - User In/Out registers are mapped as Big Endian (that is, High/Low word ordering).
  - Direct DPI parameters are mapped as Big Endian (that is, High/Low word ordering).
  - This mapping structure also applies to PowerFlex 700VC drives which use 32-bit Datalinks.

## Compatible Revisions

To use this revision of firmware, update your tools and devices as needed.

| Tool/Device                      | Version Required        |
|----------------------------------|-------------------------|
| DriveExplorer Lite/Full software | 4.01 or later           |
| DriveExecutive software          | 3.01 or later           |
| PowerFlex 7-Class drive          | all versions compatible |
| LCD HIM                          | all versions compatible |
| RSLink Classic software          | 2.43 or later           |

## Rockwell Automation Support

Rockwell Automation provides technical information on the web to assist you in using our products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of Frequently Asked Questions (FAQs), technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

Rockwell Automation also provides complimentary phone support for drives, communication adapters, and peripherals. If you experience a problem with a device, please see the information in its User Manual. For further help in getting your device operational, contact a Customer Support representative.

|                       |  |
|-----------------------|--|
| United States         | (1) 262.512.8176<br>Monday – Friday, 7am – 6pm CST   |
| Outside United States | Please contact your local Rockwell Automation representative for any technical support issues. |

For an additional level of technical phone support for installation, configuration, and troubleshooting, TechConnect Support programs are available. For more information, contact your local distributor, a Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

## Product Satisfaction Return

Rockwell Automation tests all products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow the steps below.

|                       |  |
|-----------------------|--|
| United States         | Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor to complete the return process. |
| Outside United States | Contact your local Rockwell Automation representative for the return procedure.  |

U.S. Allen-Bradley Drives Technical Support - Tel: (1) 262.512.8176, Fax: (1) 262.512.2222, Email: [support@drives.ra.rockwell.com](mailto:support@drives.ra.rockwell.com), Online: [www.ab.com/support/abdrives](http://www.ab.com/support/abdrives)

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