

# Flash

Sheet

**Affects: FMS-2000 Series**

**Addresses: See Table 1**

## FMS-2000 Series Firmware Patch to resolve issues outlined in the Safety Alert (SA 21-02) is available

Released to:  Triatek Sales Representatives

### Problem

In April 2021, we issued a Safety Alert (SA 21-02) to announce that the FMS-2000C and FMS-2000M Critical Environment Controllers and Monitors had a memory issue. This memory issue impacts the update time on the display module and the Building Automation System when the module has been powered between 12 and 24 days. After this time, the display does not update parameter changes or the alarm on any parameter for the monitored space. The FMS-2000 Series has undergone extensive testing to resolve these issues and additional issues summarized in the following table:

**Table 1: Summary of resolved issues**

Issue number	Issue description	Affected products
TRIAT-2784	FMS-2000 devices causes issues on MS/TP Bus	FMS-2000C, FMS-2000M
TRIAT-2786	FMS-2000M dropped offline to MS/TP bus after command sent to change alarm setpoint	FMS-2000C, FMS-2000M
TRIAT-2801	Display updates frozen	FMS-2000C, FMS-2000M
TRIAT-3194	FMS-2000 does not obey command priorities	FMS-2000C, FMS-2000M
TRIAT-3251	Upgrade display panel firmware and driver	FMS-2000C, FMS-2000M
TRIAT-3360	A reboot of the device can cause an alarm status change when you set the alarm limit	FMS-2000C, FMS-2000M
TRIAT-2783	FMS 2000M takes too long to transmit on trunk when it needs to perform poll for master	FMS-2000C, FMS-2000M
TRIAT-2785	FMS-2000M in neutral isolation mode has a green halo	FMS-2000C, FMS-2000M
TRIAT-2819	FMS-2000M unresponsive touchscreen	FMS-2000C, FMS-2000M
TRIAT-2834	Changing name attribute on analog Inputs (except AI-4) triggers relay output	FMS-2000C, FMS-2000M

**Table 1: Summary of resolved issues (cont.)**

<b>Issue number</b>	<b>Issue description</b>	<b>Affected products</b>
TRIAT-2845	FMS-2000C analog inputs stuck on zero	FMS-2000C, FMS-2000M
TRIAT-2924	After release all and rebooting, ISO mode is incorrect	FMS-2000C, FMS-2000M
TRIAT-3292	FMS2000C with periodic black screen conditions	FMS-2000C, FMS-2000M
TRIAT-3365	Occupancy switch DI does not change setpoints, and relays do not fire on occupancy	FMS-2000C, FMS-2000M
TRIAT-3374	Relay outputs do not work when configured for Occupancy mode or Isolation mode	FMS-2000C, FMS-2000M
TRIAT-3391	Snooze does not function for one case	FMS-2000C, FMS-2000M
TRIAT-3392	Relay logic update to keep align between 1655 and FMS2000C	FMS-2000C, FMS-2000M
TRIAT-2886	FMS-2000 M&C alarm status BACnet points have present value of alarm when you disable the alarm	FMS-2000C, FMS-2000M
TRIAT-3403	Cannot change K-Factory with 0.001 step	FMS-2000C, FMS-2000M
TRIAT-3096	FMS-2000 description text issues	FMS-2000C, FMS-2000M
TRIAT-3278	Two FMS-2000M screens randomly interact after flashing	FMS-2000C, FMS-2000M
TRIAT-3281	FMS-2000C loses MSTP MAC address after you rest the device through BMS	FMS-2000C, FMS-2000M
TRIAT-3396	Upgrade TP firmware and CFG	FMS-2000C, FMS-2000M
TRIAT-3503	Logging into the FlashTools as “service” had the Factory Reset option grayed out and unchecked	FMS-2000C, FMS-2000M
TRIAT-3505	Device does not show as an Android device in the “Other Devices” section of device manager	FMS-2000C, FMS-2000M
TRIAT-3508	Factory reset grayed out for first unit	FMS-2000C, FMS-2000M

## Affects

This problem affects the following products or systems:

- All FMS-2000C units and FMS-2000M units released since September 2020 with date codes 2036 to 2113. See Table 2 for a full list of products.

**Table 2: Affected model numbers**

FMS2C-BT00	FMS2M-BT10
FMS2C-BT10	FMS2M-BT20
FMS2C-BT20	FMS2M-BT30
FMS2C-BT30	FMS2M-BT40
FMS2C-BT40	FMS2M-BT11
FMS2C-BT01	FMS2M-BT21
FMS2C-BT11	FMS2M-BT31

**Table 2: Affected model numbers (cont.)**

FMS2C-BT21	FMS2M-BT41
FMS2C-BT31	FMS2M-BT12
FMS2C-BT41	FMS2M-BT22
FMS2C-BT02	FMS2M-BT32
FMS2C-BT12	FMS2M-BT42
FMS2C-BT22	FMS2M-T
FMS2C-BT32	FMS2M-S
FMS2C-BT42	
FMS2C-T	
FMS2C-S	

### **Solution**

You can update the firmware for the FMS-2000C and FMS-2000M. To complete the upgrade, download the firmware for your product, the new FlashTool, and associated software drivers. You can find these files on the Licensing Portal.

**IMPORTANT:** Before you install the firmware, review and follow the firmware update instructions found on [Knowledge Exchange](#) to avoid damage to the product. Full instructions can be found in the Action section.

**IMPORTANT:** If you have a previous version of FlashTools on your computer, you must uninstall the old version then install the new version of FlashTools from the Licensing Portal.

**IMPORTANT:**

Before you proceed with the update, confirm that your display has the latest hardware. If your display has a date code between September 16, 2020 and January 15, 2021 or 2037-2104, complete one of the following options to verify if the hardware has been updated:

- 1) Remove the back cover and check for the presence of resistor R69. If it is there, you need to replace your display.
- 2) Use an ohmmeter to measure the resistance between the + and - terminals on the BACnet connector. If the resistance measures approximately 120 ohm, your display is the old hardware and needs to be replaced. If the resistance is higher than 100K ohm, the hardware is up to date.

If you need to replace your, contact Inside Sales at [BE-NA-CPINSIDESALES@JCI.COM](mailto:BE-NA-CPINSIDESALES@JCI.COM). Reference SA 21-01, provide the model number of your FMS-2000, and the original order number. Inside Sales will place a new order for your FMS-2000 display on your behalf and provide the necessary shipping instructions to return the defective product.

**Note:** Another firmware update will be available when we relaunch the FMS-2000 products, provisionally set for later this year. The update will include a few minor enhancements.

## Action

Instructions can be accessed on Knowledge Exchange [here](#).

## Introduction

The following sections explain how to update the firmware for the xMS-2000 displays in the field with firmware older than 1.0.0-795 for the FMS-2000C or 1.0.M-417 for the FMS-2000M. Check the version of your firmware in the FMS-2000M under **Settings > Diagnostics > About this FMS > Display Firmware**. For the FMS-2000C, check **Settings > Diagnostics > About this FMS > Device Info > Software Version**.

## Necessary equipment

- 1/16 in. hex wrench
- USB Type-A to Micro USB-B cable. Ensure the cable is capable of both data transfer and power supply.

## Before you begin

- The update procedure erases all non-default settings.
  - a. For the FMS-2000M, document the settings.
  - b. For the FMS-2000C, save all settings with the **Settings > Diagnostics > Settings > Save Settings** option.
- Download the necessary firmware, FlashTools, and drivers from the License Portal and save them on your laptop. See the following sections for instructions on how to access the License Portal.
  - ① **Note:** If you have an earlier version of the FlashTools, delete it and replace it with the newest version on the License Portal.
- Remove the display from the wall to gain access to the Micro USB port.

## Accessing the License Portal as a Johnson Controls employee

You can find the latest firmware updates, driver packages, and FlashTools necessary to update the xMS-2000 displays on the Johnson Controls License Portal. It is necessary to request permission to gain access to the License Portal.

1. To request access, search for 'Software Licensing Portal Access' on the Johnson Controls [IT Catalog](#), then complete and submit the request form.
2. When you have been granted access, you can log in to the [License Portal](#) with your Johnson Controls email and password.

## Accessing the License Portal as a non-Johnson Controls employee

1. Contact the Johnson Controls Software Support team at [Software.Manufacturing@jci.com](mailto:Software.Manufacturing@jci.com) and request License Portal access for a new company.
2. Provide the company name, address, administrator name, and admin email.
3. When the account is enabled, the designated administrator receives an email with instructions on how to access the portal.
4. The admin can request access for other employees in their company with the following steps:
  - a. Log on as an admin and request to add another employee of the company.
  - b. Enter the employee's user name and company email address, and select the appropriate user role.

- c. The Johnson Controls Software Support team reviews the request.
- d. When approved, the new user receives an email with instructions on how to access the portal.

### Using the License Portal

1. In the [License Portal](#), select the Software Tab at the top and search for xMS-2000 Driver Package and xMS-2000 FlashTool. Firmware can be searched by product name, for example: FMS-2000C.
2. Click the link to download.

### Installing the display driver

These instructions are for Windows<sup>®</sup> 10. This task requires you to restart the computer. Print the instructions or take note of Steps 5, 6, and 7 as the computer is not accessible during restart.

#### ① **Note:**

- The driver package is an Android driver for Windows, originally signed by Google. While the driver code is unchanged, the INF configuration file was modified to include FMS hardware IDs for 32-bit and 64-bit machines. This modification invalidates the driver signature. As a result, it is necessary to boot Windows 10 into a special mode to install the driver.
  - In the future, the Android device will not show up until you enable Android Debug Bridge (ADB) in the UI. In future upgrades, these instructions may differ.
1. From the [License Portal](#), download the xMS-2000 Driver Package and save it on the computer.
  2. Extract the zip file to a convenient location.
  3. **Conditional:** If there are previously installed drivers for FMS, you must uninstall them.
    - a. Open Device Manager and connect the display with a USB Type A to Micro USB-B cable.
    - b. Right-click each device associated with the display and select **Uninstall Device**.
    - c. Select the check box to delete the drivers
  4. In Control Panel, locate BitLocker Drive Encryption and select the option to suspend protection. Click **Yes** in the BitLocker Drive Encryption window to confirm. You may need to change view settings in Control Panel to see BitLocker Drive Encryption. Your computer may already have this setting suspended or disabled.

**IMPORTANT:** Failure to complete this step locks the computer.

5. Click the Windows menu, then click the power icon. Hold down the Shift key and click **Restart**.
6. In the Shutdown menu, click **Troubleshoot > Advanced options > Startup Settings**. Click the **Restart** button to restart the computer.
7. While on the Startup Settings menu, press **F7** to boot Windows without driver signature enforcement. If this menu does not appear, proceed to step 8.
8. If not already connected, connect the computer to the xMS-2000 display using a USB Type A to Micro USB-B cable. This cable must be capable of data transfer as well as power supply.
9. Open **Device Manager > Other Devices**. There are a maximum of three Android devices in this section. Right-click the first Android device and click **Update Driver > Browse my computer for drivers > Browse**. Go to the location where you previously extracted the zip

file and select the driver.

① **Note:** In some cases, the device appears under the **Universal Serial Bus controllers** section as **Unknown USB Device (Device Descriptor Request Failed)**. In this case, right click on the device and choose the **Disable device** option. Right-click and choose the **Enable device** option. The device then appears as an Android device.

10. **Optional:** If an error reports that the driver was not found, repeat the previous step on the second or third Android device in the **Other Devices** section.
11. **Optional:** If Windows warns that the driver is unsigned, choose the option to proceed anyway.

### Installing firmware

1. From the [License Portal](#), download the xMS-2000 FlashTools and the firmware for your specific device. Search for firmware by product name.
2. Save the xMS-2000 FlashTools and product firmware to your computer and extract. There is another .zip file inside the product firmware folder. Do not extract that file. If you download multiple firmware files, ensure each is in its own sub-folder.
3. Launch the **FlashTools** app on the computer and log in with **Admin** as both the ID and password. Select the check box to remember login settings and click **Login**.
4. Connect 24 VAC power to the xMS-2000 display via the 4-pin terminal block marked 24V\_IN.
5. Connect a USB Type A to Micro USB-B cable from the computer to the display's Micro USB connector at the back of the enclosure.

**IMPORTANT:** An incomplete flash can leave the display in an unresponsive state that is not field recoverable. Before starting the flashing process, ensure that the computer power, display power, and USB connection are all secure.

6. In the upper-right of the **FlashTools** window, click the folder icon.
7. Locate and select the folder where you previously saved the firmware files. Click **OK**. The location and file name appear in the top bar of FlashTools.
8. Select the **Factory Reset** check box. This will reset all configurations to the default state.
9. Click **Execute** in the FlashTools window. Click **Yes** to confirm parameter settings. FlashTools then extracts the firmware zip file and begins the flashing process.
10. If FlashTools reports that a device was not found, click **OK** and then click **Execute** to try the flashing process again.
11. When the process is complete, FlashTools displays a message to confirm the process was successful.

**IMPORTANT:** Do not unplug the device until after the pop-up window confirms a successful flash.

12. When the display user interface appears, unplug the micro USB cable and verify or set the MAC Address at **Settings > Network > MAC Address**.
13. Power cycle the display to reboot it.

① **Note:** FlashTools can flash up to five displays simultaneously with the same firmware. This requires that all displays connect to the computer through a USB hub, and a power supply is daisy chained to each display. The procedure is the same as previously described. The process only completes after all devices boot. A notice appears if any

device fails to boot within three minutes. If this happens, disconnect the devices that rebooted successfully, and execute the flash process again for the devices that did not reboot.



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