# FX-400 and FX-401

## Fire Alarm Control Panel


Configuration Guide

LT-6710 Rev. 1
August 2023

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# 1.0 Installation

To connect the Configurator to the Fire Alarm Control Panel you must:

- Install the Configurator.
- Insert the Wibu key.
- Connect the cable.
- Start the Configurator.

Follow the instructions below to complete these steps.

## 1.1 Install the Configurator

You need the following items in order to install the Configurator:

- Windows 7 or Windows 10 laptop computer with a USB port.
- MGC-400 Series Configuration Utility (the Configurator).

Follow these instructions to install the Configurator.

1. Right-click the **MGC-400_Configurator** icon, and then click **Run as Administrator**.

   The Setup program starts.

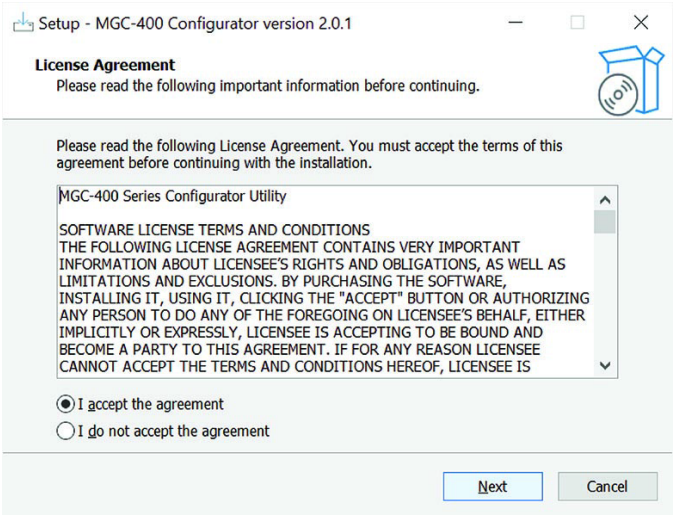


**Figure 1 Setup - MGC-400 Configurator**

2. Click **I accept the agreement** to accept the agreement, and then click **Next**.

The **Select Destination Location** window appears.

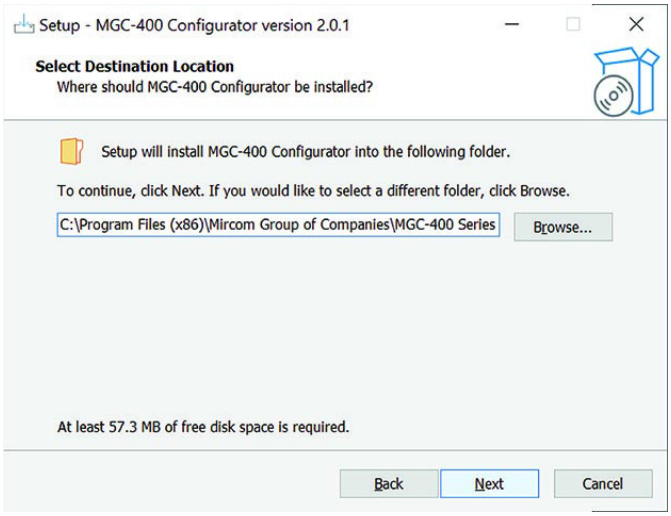


**Figure 2 Select Destination Location**

3. Click Browse and select a location for the Configurator to be installed, and then click **Next**.

   The **Select Start Menu Folder** window appears.

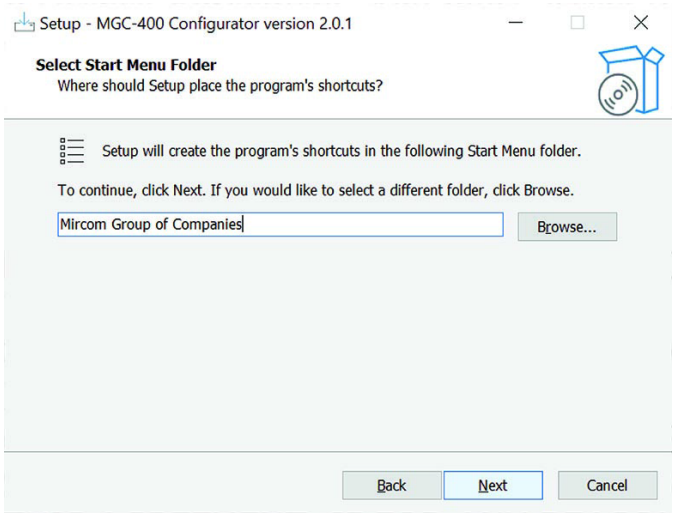


**Figure 3 Select Start Menu Folder**

4. Click **Next**.

The **Ready to Install** window appears.

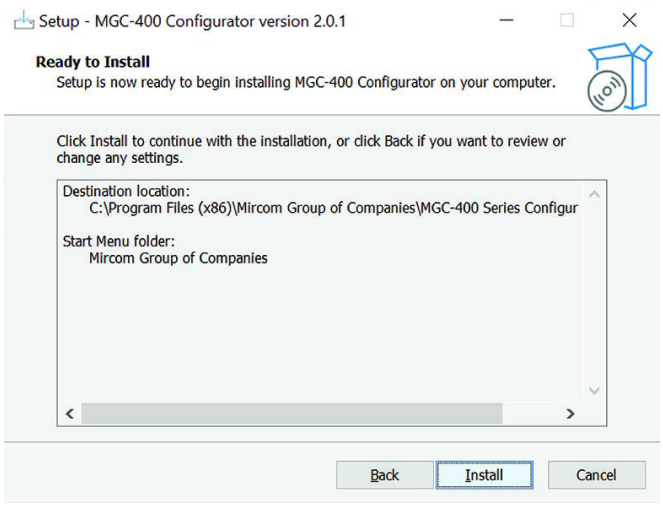


**Figure 4 Ready to Install**

5. Click **Install**.

   The MGC-400 Configurator software is installed.

6. The **FTDI CDM Drivers** window appears. These drivers are necessary for connecting to the panel with a USB cable.

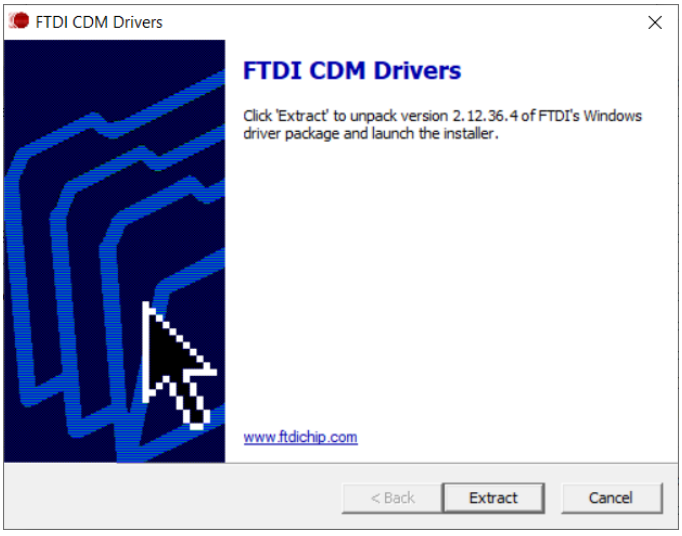


**Figure 5 FTDI CDM Drivers**

7. Click **Extract**.

The Welcome window appears.

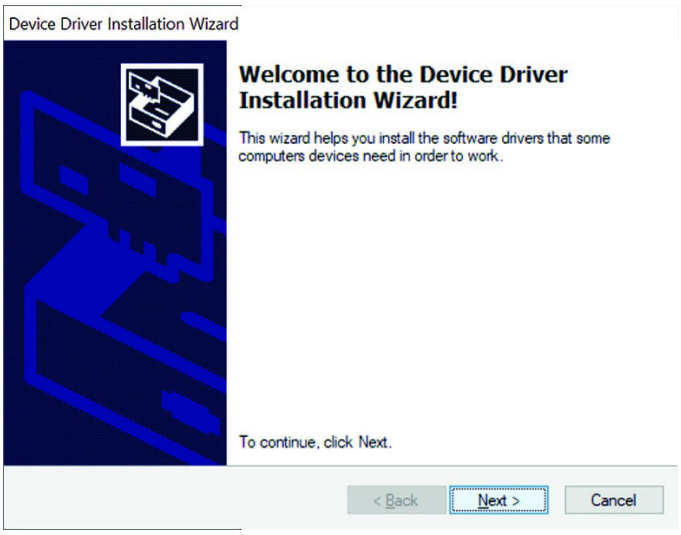


**Figure 6 Welcome to the Device Drive Installation Wizard**

8. Click **Next**.

   The License Agreement window appears.

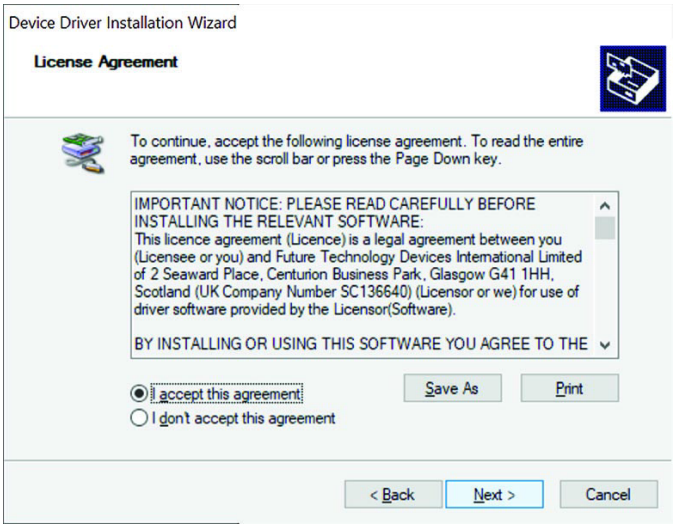


**Figure 7 Device Drive License Agreement**

9. Click **I accept the agreement** to accept the agreement, and then click **Next**.

The **Completing the Device Driver Installation Wizard** window appears.

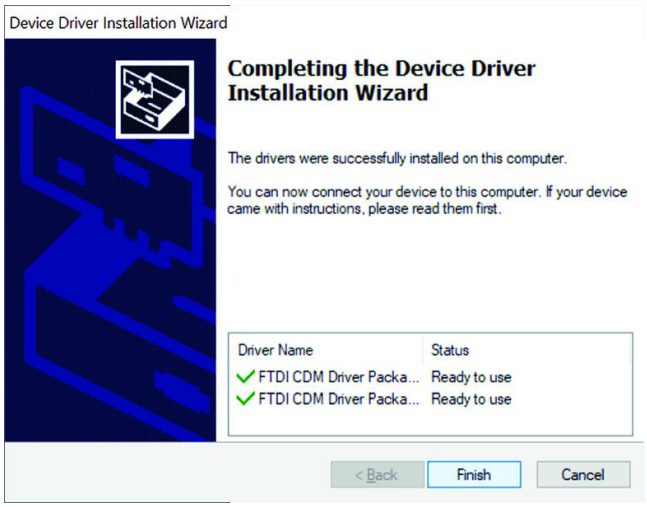


**Figure 8 Completing the Device Drive Installation Wizard**

10. Click **Finish**.

    The **WibuKey Setup** window appears. The Wibu key is a USB flash drive that provides security by controlling access to the Fire Alarm Control Panel.

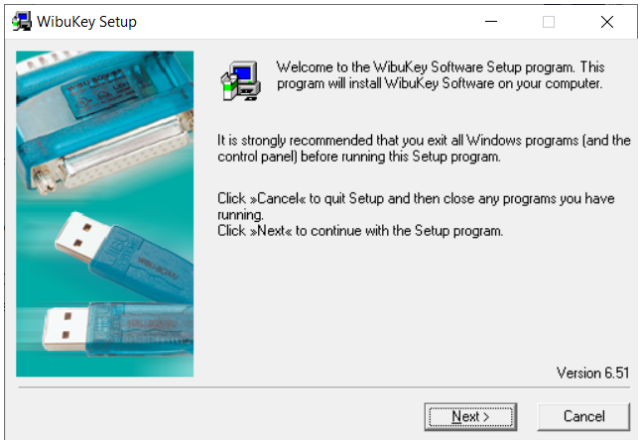


**Figure 9 WibuKey Setup**

11. Click **Next**.

The language selection window appears.

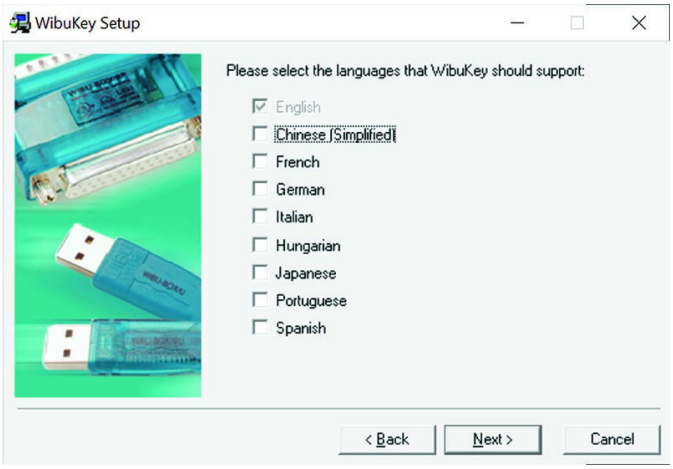


**Figure 10 WibuKey Language Selection**

12. Click **Next**.

    The destination folder window appears.

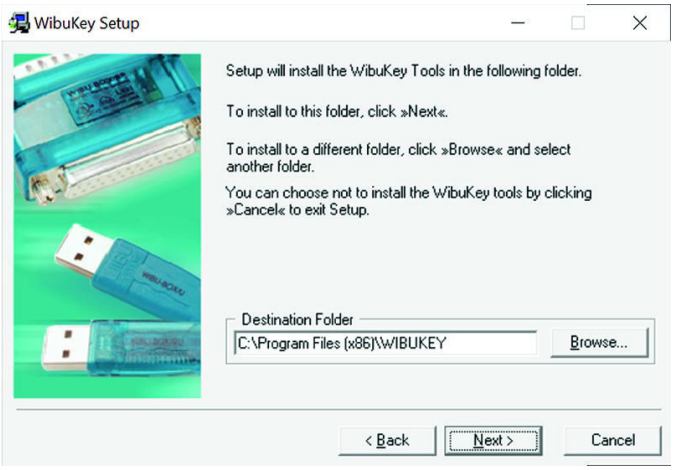


**Figure 11 WibuKey Destination Folder**

13. Click **Next**.
14. On the next window, click **Yes** to create the folder.

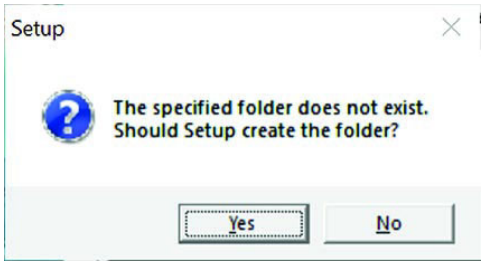


**Figure 12 The specified folder does not exist**

The components window appears.

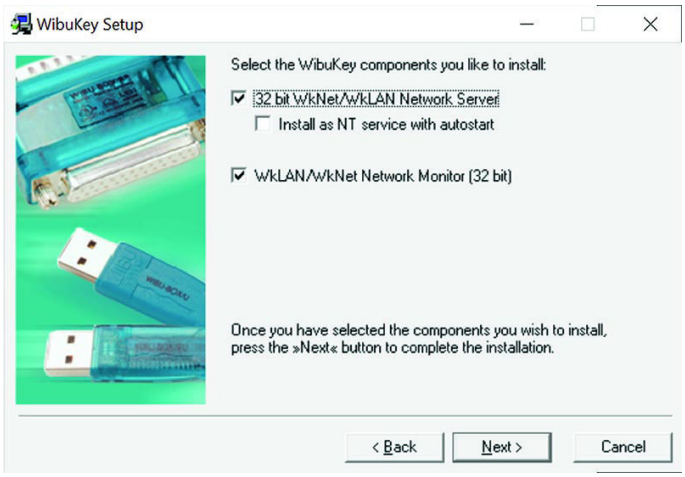


**Figure 13 WibuKey Components**

15. Click **Next**.

    The summary window appears.

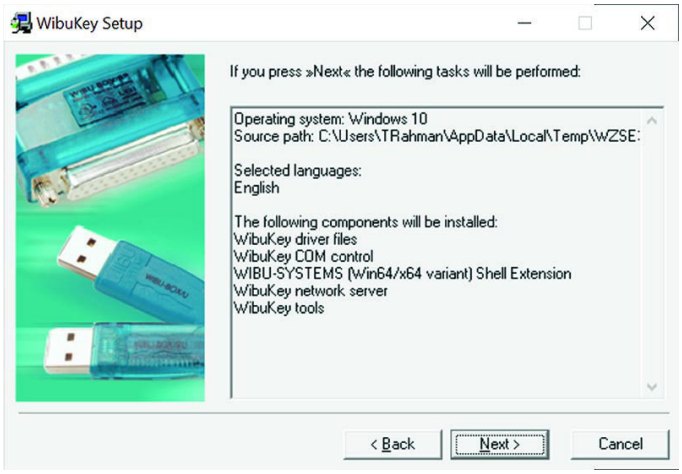


**Figure 14 WibuKey Summary**

16. Click **Next**.

The second summary window appears.

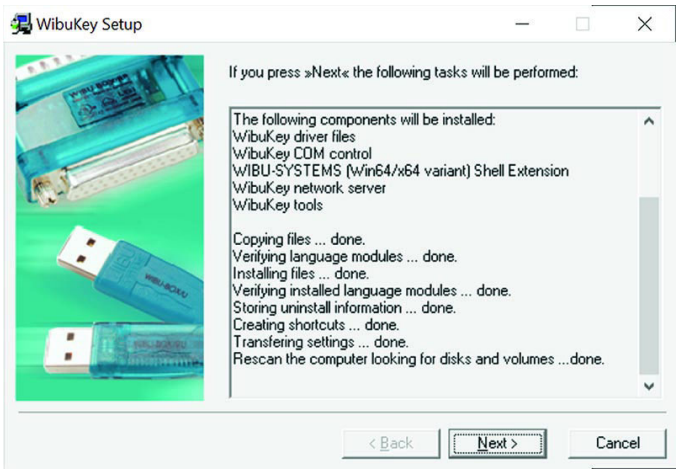


**Figure 15 WibuKey Second Summary**

17. Click **Next**.

    The Finish window appears.

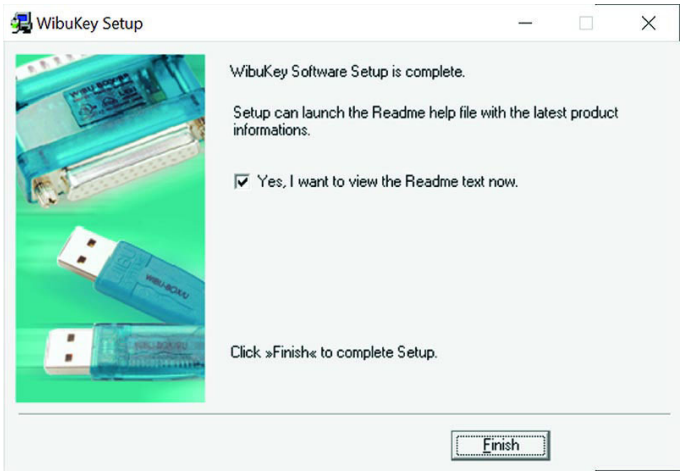


**Figure 16 WibuKey Finish**

18. Click **Finish**.
19. Click OK on the **WibuKey driver successfully installed** window.

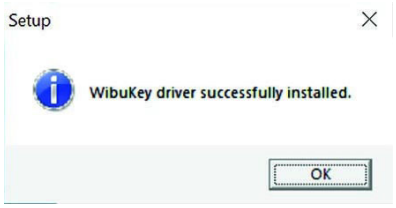


**Figure 17 WibuKey driver successfully installed**

After the WibuKey drivers have been installed, the last screen of the **MGC-400 Setup Wizard** appears.


**Figure 18 Completing the MGC-400 Configurator Setup Wizard**

20. Click **Finish**.
21. Close the **Welcome to the WibuKey User Help** window.

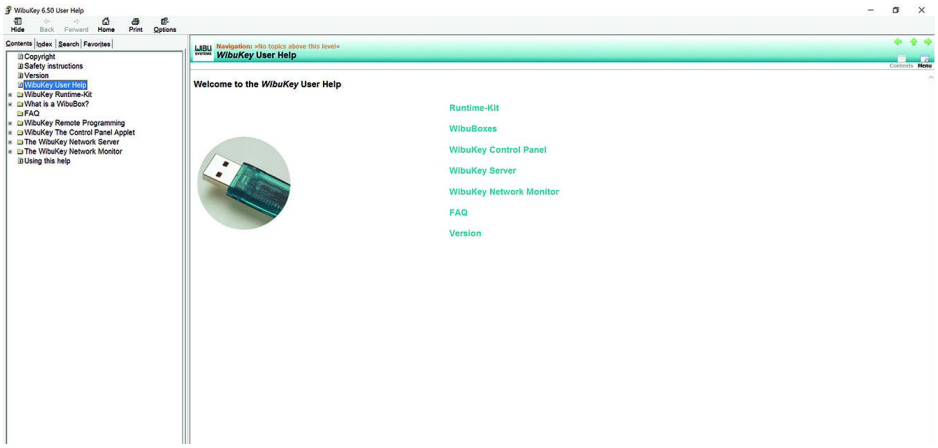


**Figure 19 Welcome to the WibuKey User Help**

## 1.2 Insert the Wibu key

1. Insert your Wibu key into the computer.

   If a **Security Key Logon** window appears that says that your security key is an older version, you must contact your ESD Administrator or Mircom technical support to upgrade your key. Otherwise, you might not be able to connect to the FX-400/401.

## 1.3 Connect the Computer to the Panel through the Micro-B USB Port on the Core Board

**Attention:** **Follow the instructions in this section only if the panel's plug-in core board has a sticker showing "SO-289 v3.0.1" or "SO-479 v3.0.1" (or a number higher than 3.0.1). The plug-in core board is shown in Figure 20.**

**If the panel's plug-in core board does NOT have a sticker showing "SO-289 v3.0.1" or "SO-479 v3.0.1" (or a number higher than 3.0.1), follow the instruction in section 1.4 on page 20.**

You need:

- USB A plug to micro-B plug cable.

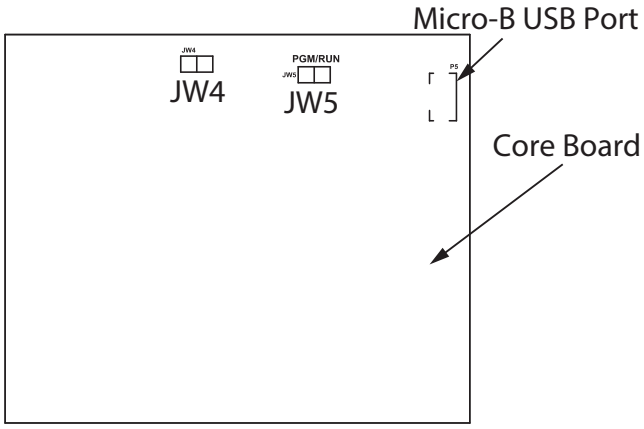


**Figure 20 The core board**

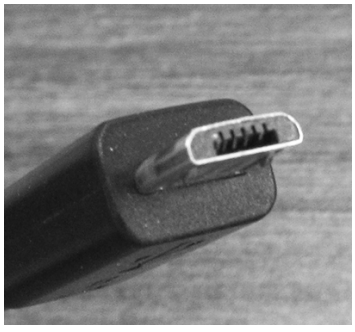

**Figure 21 USB micro-B connector**

1. Connect the USB cable to a USB port on the computer, and to the USB port on the FX-400/401 plug-in core board. This port is labeled **P5**.
2. Go to section 1.5 on page 26.

## 1.4 Connect the Computer to the Panel through the Main Board

**Attention: These instructions describe how to connect to the panel if the panel's plug-in core board does NOT have a sticker showing "SO-289 v3.0.1" or "SO-479 v3.0.1" (or a number higher than 3.0.1).**

**If the sticker on the core board DOES show "SO-289 v3.0.1" or "SO-479 v3.0.1" (or higher), you have the option of connecting to the panel with a micro-B USB cable, as described in section 1.3 on page 19.**

You need:

- MGC-CONFIG-KIT4 Fire Panel Configuration Kit (this kit includes the cables required to connect the laptop computer to the Fire Alarm Control Panel)

### 1.4.1 Connect the Laptop to the Panel

1. Connect the laptop to the panel using one of the methods shown below. The method shown in Figure 22 is recommended.


**Figure 22 USB A to B plug cable to P13 on main board**


**Figure 23 UIMA4 to P5 on main board**

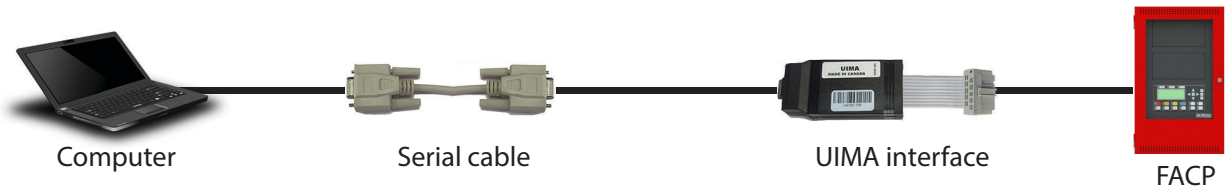


**Figure 24 UIMA4 to P5 on main board**

2. Follow the instructions starting in section 1.4.2 on page 21 to configure Windows.

### 1.4.2 Start the Windows Device Manager

**Start the Device Manager in Windows 7**

1. Open the Windows **Control Panel**.
2. Click **Device Manager** on the left.

   The Device Manager window appears.

- If you are using a USB cable (Figure 22), go to section 1.4.3 on page 21.
- If you are using a UIMA4 cable (Figure 23 or Figure 24), go to section 1.4.4 on page 24.

**Start the Device Manager in Windows 10**

1. In the search field, type **Device Manager**, then press Enter.

   The Device Manager window appears.

- If you are using a USB cable (Figure 22), go to section 1.4.3.
- If you are using a UIMA4 cable (Figure 23 or Figure 24), go to section 1.4.4 on page 24.

### 1.4.3 Configure the Device Manager for USB

**Attention: If you connect more than one FX-400/401 panel to the same computer over USB, always use the same physical USB port on the computer. Otherwise, every time that you connect a panel to a different port, you must complete the steps in this section.**

**In addition, if you connect more than one FX-400/401 panel to the same computer, do not use a USB 3 port. Otherwise, every time that you connect a new panel to the USB 3 port, you must complete the steps in this section.**

1. In the Device Manager, click the plus sign (**+**) or arrow ( ▷ ) beside **Mice and other pointing devices**.

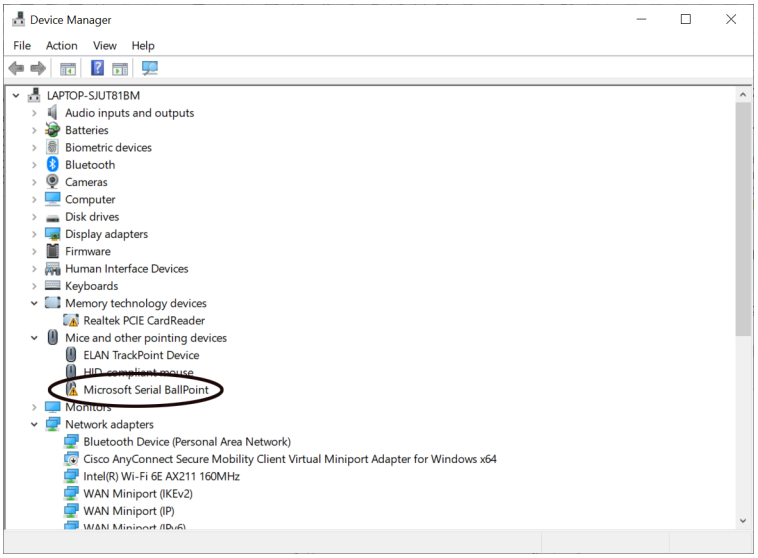


**Figure 25 Device Manager**

2. Right-click **Microsoft Serial Ballpoint**, and then click **Disable device** in the pulldown menu.

   A window appears warning that disabling this device will cause it to stop functioning.

3. Click **Yes**.

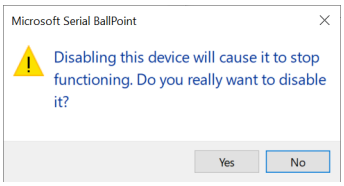


**Figure 26 Microsoft Serial Ballpoint**

An **X** (a downward pointing arrow in Windows 8) appears over the Microsoft Serial Ballpoint, showing that is it disabled.

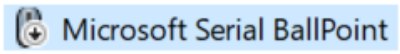


**Figure 27 Microsoft Serial Ballpoint Disabled**

4. In the Device Manager window, click the plus sign (**+**) or arrow ( ▷ ) beside **Ports**.

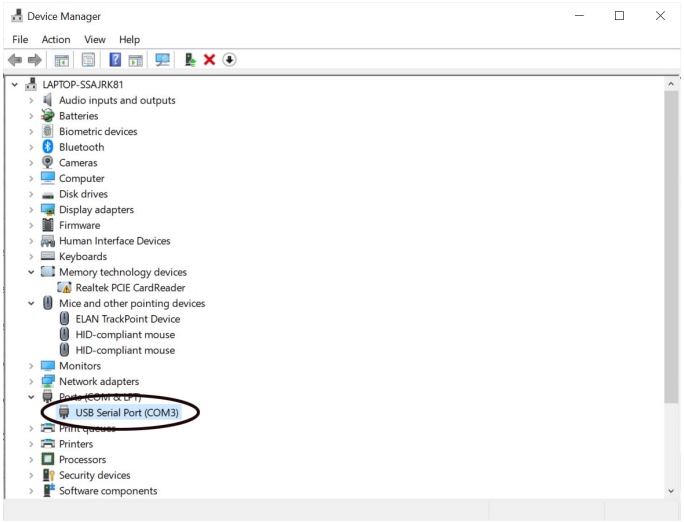


**Figure 28 USB Serial Port in the Device Manager**

5. Right-click **USB Serial Port**, and then click **Properties** in the pulldown menu.

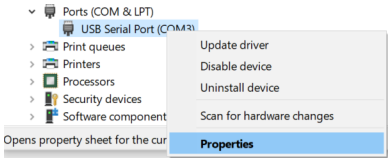


**Figure 29 Click Properties in the Pulldown Menu**

If there is more than one **USB Serial Port**, click the one that you are using to connect to the FX-400/401.

The **USB Serial Port Properties** window appears.

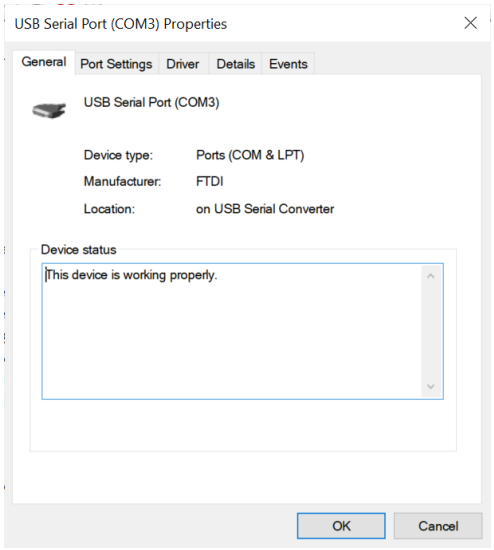


**Figure 30 USB Serial Port Properties**

6. Click the **Port Settings** tab.

   The **Port Settings** window appears.

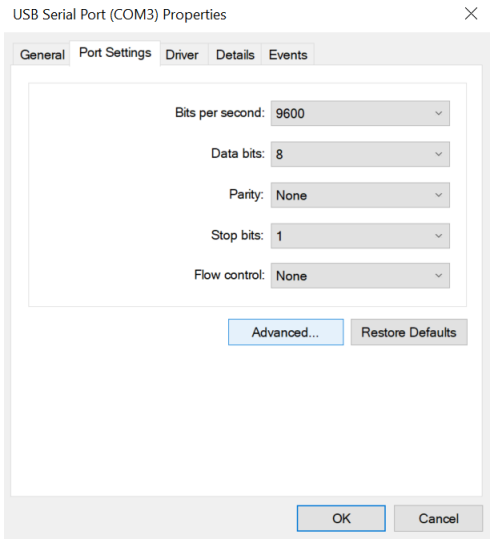


**Figure 31 Port Settings**

7. Click **Advanced**.

   The **Advanced Settings** window appears.

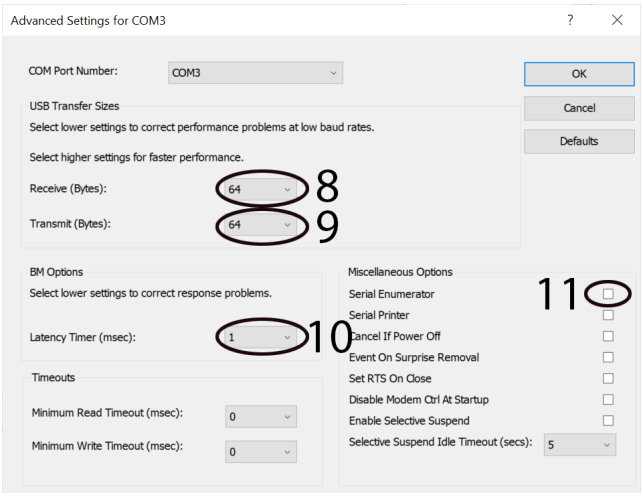


**Figure 32 Advanced Settings**

8. Click the pulldown menu beside **Receive (Bytes)**, and then click **64**.
9. Click the pulldown menu beside **Transmit (Bytes)**, and then click **64**.
10. Click the pulldown menu beside **Latency Timer (msec)**, and then click **1**.
11. Uncheck the checkbox beside **Serial Enumerator**.
12. Click **OK** to close the **Advanced Settings** window.
13. Click **OK** to close the **USB Serial Port Properties** window, and then close the **Device Manager** window.
14. Go to section 1.5 on page 26.

### 1.4.4 Configure the Device Manager for a Serial Connection

1. In the Device Manager window, click the plus sign (**+**) or arrow ( ▷ ) beside **Ports**.

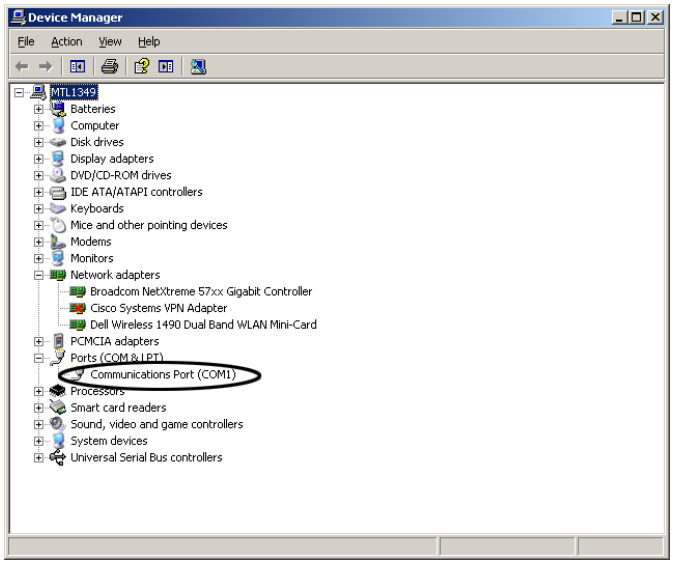


**Figure 33 COM Port in the Device Manager**

2. Right-click the COM communications port, and then click **Properties** in the pulldown menu. It is usually labeled **Communications Port (COM1)**.

   If there is more than one COM communications port, click the one that you are using to connect to the FX-400/401.

   The **Communications Port Properties** window appears.

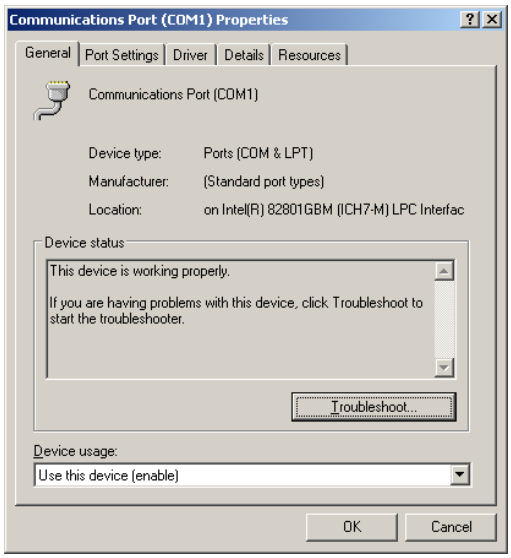


**Figure 34 Communications Port Properties**

3. Click the **Port Settings** tab.

   The **Port Settings** window appears.

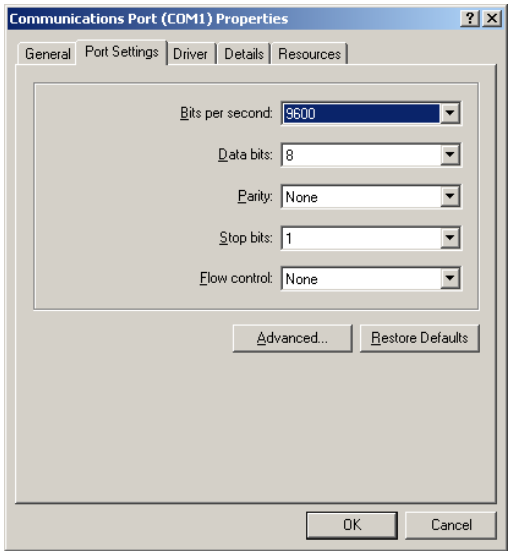


**Figure 35 Port Settings**

4. Click **Advanced**.

   The **Advanced Settings** window appears.

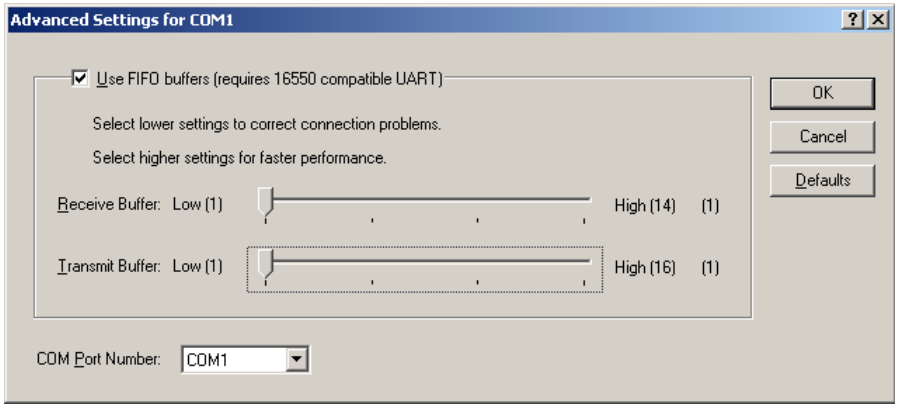


**Figure 36 Advanced Settings**

5. Drag the slider beside **Receive Buffer** to the far left.
6. Drag the slider beside **Transmit Buffer** to the far left.
7. Click **OK** to close the **Advanced Settings** window.
8. Click **OK** to close the **Communications Port Properties** window, and then close the **Device Manager** window.
9. Go to section 1.5 below.

## 1.5 Start the Configurator

1. Start the Configurator, then click **File**, then click **User Preferences**.
2. Enter your name in the **User Name** field.
3. In the **Serial Port** menu, select the COM port that the cable is using.

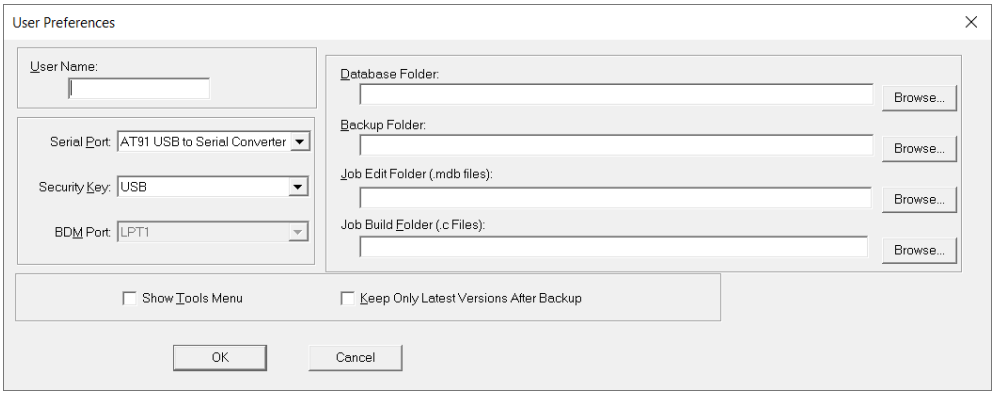


**Figure 37 Select the COM port in User Preferences**

4. Click **OK** to close the User Preferences window.
5. Click **Panel**, then click **Connect**.

   The **Connection** window appears.

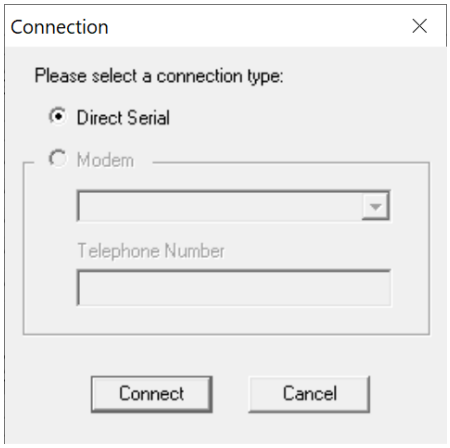


**Figure 38 Connection**

6. Click **Connect**.
7. You are now connected to the panel. Go to section 2.0 on page 28.

# 2.0 User Preferences

The first time the Configurator starts, the **User Preferences** window appears.


**Figure 39 User Preferences window**

**Table 1 User Preferences**

| Name | Description |
|---|---|
| **User Name** | Used for the author of all new jobs and job versions. |
| **Serial Port** | Designates which COM port (or USB virtual COM port) the Configurator uses to connect to the panel. |
| **Security Key** | Lists the ports where a Wibu key can be inserted. The Wibu key is required. |
| **BDM Port** | Designates which parallel port the Background Debugging Module uses (for those products that support this interface). |
| **Database Folder** | Specifies where the main Configurator.mdb database file resides. Usually the folder where the Configurator is installed. |
| **Job Edit Folder** | Specifies where individual job files are extracted to and imported from. |
| **Job Build Folder** | Specifies where the 'C' file output files are written by Job Validate and other trace or debug facilities. |
| **Backup Folder** | Specifies where backup database files are written to and restored from. |
| **Show Tools Menu** | Displays or hides an additional Tools menu. This menu contains trace and debug facilities and some features that Technical Support may require a user to turn on to gather diagnostic information. |
| **Keep Only Latest Versions After Backup** | If enabled, only the latest versions of all jobs are kept after a successful Backup Database command. All older versions are removed from the current database. |

# 3.0 Overview

In order to operate as a fire alarm, a fire alarm panel must be loaded with firmware and configuration data. A set of configuration data, used to uniquely describe and control a given set of hardware, is called a Job. The Configurator allows you to create and manage jobs. It also allows you to send firmware to a panel and all its related CPUs.

The Configurator typically runs on a portable computer that the technician takes to the job site connects to the panel. The technician uses the Configurator to prepare a job, and then send the job to the panel. The same or a different authorised technician can later retrieve the job from the panel, modify it and send it back.

The job repository is a relational database. Jobs can be imported or merged from another database, copied, deleted, and archived in various formats. A job can be printed, or two versions of a job can be compared.

The first time the Configurator is opened, it prompts you for the paths and file names where jobs, backups, and the database should be stored.

Jobs can be transferred through a USB connection directly to the panel from the PC, or through a Universal Interface Module Adapter (UIMA4) connection from the PC serial port to the 10 pin P5 port on the main board.

## 3.1 Configurator Window

The Configurator window is divided into three panes.

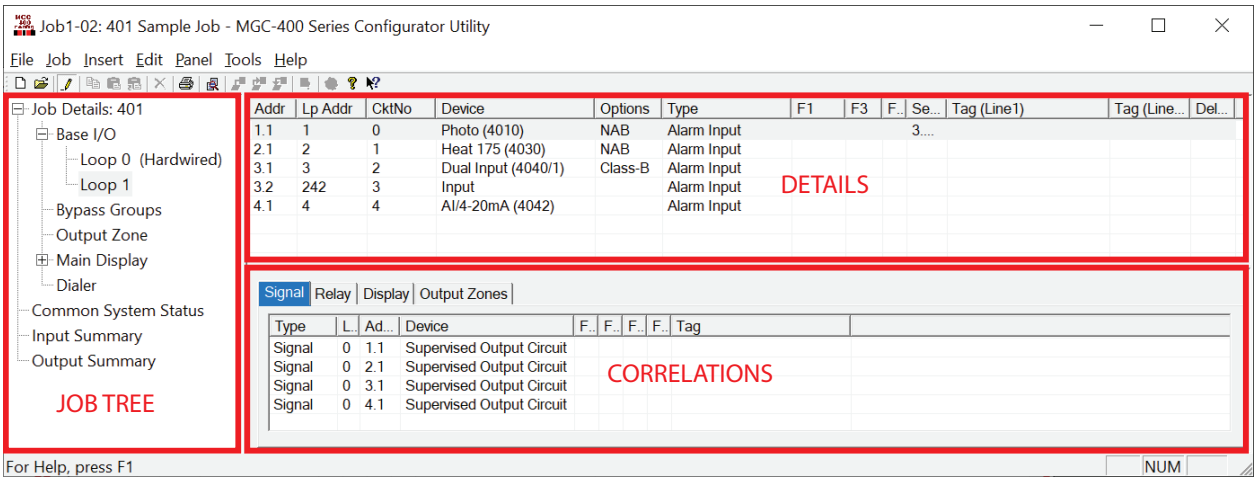


**Figure 40 MGC-400 Configurator**

### 3.1.1 Job Tree

On the left of the screen, the job is represented as a tree, similar to a file explorer. At the highest level in the tree are the CPUs. Under each CPU are its components - annunciators, loop controllers, and so on. Some items are further subdivided; for example, an annunciator is divided into display adders and a loop controller into loops.

Some items in the tree do not directly represent a physical component. For example, tree nodes exist for input and output summaries and for common controls.

### 3.1.2 Details

The top right pane is used to display the details of the currently selected tree node.

### 3.1.3 Correlations

Programming a Fire Alarm Control Panel consists of correlating inputs to outputs. For example, you might correlate all the smoke detectors on the first floor to the speakers on the first and second floors, and smoke detectors on the second floor to the speakers on the first, second, and third floors, and so on.

The third, bottom right pane is used to show correlations from an item selected in the top right pane. When a loop is selected in the tree, the top right pane shows all of its devices or circuits. When a input circuit is selected in the list, then the bottom pane shows the output circuits it is correlated to.

A tool bar provides convenient short cuts to the more frequently used functions.

# 4.0 Menus

## 4.1 File Menu

The File Menu contains the following commands:

**Table 2 File Menu**

| Name | Shortcut | Description |
|---|---|---|
| **Backup Database** | | Makes a copy of the Master Database in the file folder specified in the User Preferences. The backup file has a name of the form **YYYY-MM-DD.mdb**. The **Restore Database** command recovers all of the jobs in the backed up database. The **Import Job** command recovers selected jobs from the backed up database. Back up your Master Database often and store the backup file on removable media. |
| **Restore Database** | | Restores the backup database to the active database directory for use or modification. **This command overwrites the existing database and returns the database to the date the backup was made.** |
| **Compact Database** | | To ensure optimal performance, you should compact and repair your database on a regular basis. If you have purged job versions or deleted jobs, compacting the database regains the space occupied by those records. |
| **User Preferences** | | Specifies user preferences, such as the location of database, backups and job files. |
| **Print** |  Ctrl+P | Prints the active job. |
| **Print Preview** | | Displays a Print Preview of the active job. |
| **Print Setup** | | Selects the printer, paper size and orientation for a print job. |
| **Exit** | | Closes the Configurator. |

## 4.2 Job Menu

The Job Menu contains the following commands:

**Table 3 Job Menu**

| Name | Shortcut | Description |
|---|---|---|
| **New Job** |  Ctrl+N | Opens the Create Job window which lets you start a new job. The new job can be based on a supplied template or on an existing job. |

**Table 3 Job Menu (Continued)**

| Name | Shortcut | Description |
|---|---|---|
| **Open Job** |  Ctrl+O | Opens an existing job from your database. |
| **Import Job** |  | Imports a selected job version from an external database or serialized job archive and converts the job to the current version if necessary. |
| **Export Job** | Ctrl+E | Exports the current job in one of two formats: a single job database file, or a compact, serialized archive format. |
| **New Version** | Ctrl+W | Makes a copy of the current job, assigning it the next highest version number. You are prompted for mandatory comments and may also override the Author field. The Job Name cannot be changed. The new version is unlocked for editing. |
| **Delete Job Version** | Ctrl+D | Permanently deletes the current job version from the database. |
| **Version History** | | Displays the version history (date, author, comments) for the current job. |
| **Compare Job Versions** | | Compares two versions of the same job, or two similar jobs of different lineage. |
| **Validate Job** | | Performs all of the steps normally performed when the Configurator prepares to send a job to the panel. |
| **Edit Job** | | Toggles the lock on a job that is protected against unintentional edits or has been down loaded to a panel. |

## 4.3 Insert Menu

The Insert Menu contains the following commands.

Some commands may be disabled (greyed) depending on what items are selected.

**Table 4 Insert Menu**

| Name | Description |
|---|---|
| **Add Loop Controllers** | Adds an Addressable Loop Controller to the job (FX-401 only). |
| **Add Annunciator** | Adds an LCD or LED Annunciator to the job. |
| **Add Display Adder** | Adds a Display Adder to an Annunciator or Base Panel. |
| **Add Device** | If the selected tree item is a device loop, launches a dialog to add a device. |
| **Add Group** | If the selected tree item is Bypass Groups, adds a new bypass group to the Bypass Group view. |
| **Add Correlations** | Launches a dialog that allows correlations to be added to the selected devices or display items. |

## 4.4 Edit Menu

The Edit Menu contains the following commands.

Some commands may be disabled (greyed) depending on what items are selected.

**Table 5 Edit Menu**

| Name | Short cut | Description |
|---|---|---|
| **Delete Item** | Del | Deletes the currently selected item. |
| **Modify Item** | Ctrl+M | If the currently selected item is a row in an editable list, then the first changeable cell is selected and prepared for editing. |
| **Copy** | Ctrl+C | Copies the selected item(s) to the clipboard. |
| **Paste** | Ctrl+V | Pastes items from the clipboard to the selected destination. |
| **Paste Special** | Ctrl+Shift +V | Similar to Paste. Opens the Paste Special dialog to allow defaults to be changed before pasting. |

## 4.5 Panel Menu

The Panel Menu contains the following commands:

**Table 6 Panel Menu**

| Name | Short cut | Description |
|---|---|---|
| **Connect** | Ctrl+L | Establishes a connection between the configuration tool and the panel, enabling most of the other commands in this menu. Remember to disconnect when you are finished, as a trouble appears on the fire alarm panel as long as the laptop is connected. |
| **Send Job** | Ctrl+S | Sends the job to the panel. |
| **Get Job** | Ctrl+G | Gets the job from the panel and stores it on the configuration tool's database. The job becomes the current job. |
| **Panel Information** | | Displays detailed information about the panel to which the configuration tool is connected. |
| **Security Key Info** | | Displays a window with the security key information such as serial number, expiry date, and number of uses. |
| **Event Log** | | Displays a list of events from the panel. |
| **Upgrade Firmware** | | Opens a wizard which guides you through the firmware upgrade process. |

## 4.6 Tools Menu

The items under the Tools Menu are used mainly for troubleshooting and diagnostic purposes by the factory.

**Table 7 Tools Menus**

| Name | Short cut | Description |
|---|---|---|
| **Extract All Db** | | Extracts the latest version of every job to individual database files. |
| **Validate All** | Ctrl+S | Validates the latest version of every job on the database. |
| **Build Job** | Ctrl+B | Builds the job, assuming the latest product version, creating a "c" file in the Job Build folder. |
| **Build Job (old versions)...** | | Builds the job "c" file for a specified, older product version. |
| **Link Statistics** | | Displays the connection link statistics. |
| **Log Send** | | Toggles the current state of the "dump on send" option. Causes the "c" file to be produced and dumped on a Get Job. |
| **Log Get** | | Toggles the current state of the "dump on get" option. Causes the "c" file to be produced and dumped on a Send Get. |
| **Log Comms** | | Toggles logging of serial communications. |
| **Trace** | | Toggles the current state of the trace option. When turned on this causes debug information to be written to a trace file. |
| **Display Structure** | | Lets you view and log panel data structures. |
| **External Bus** | | Toggles the "Use External Bus" setting. When turned on, this signals that the Configurator is connected to the external bus of the panel. |

**Note:** The Tools menu is only available if you checked the **Show Tools Menu** option. See section 2.0 on page 28.

## 4.7 Quick Bar

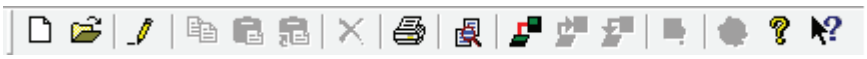

**Table 8 Quick Bar Icons**

| Name |
|---|
| New Job |
| Select Job and Version |
| Toggle Edit Job |

**Table 8 Quick Bar Icons (Continued)**

| Name |
|---|
| Copy |
| Paste |
| Paste Special |
| Delete |
| Print |
| Compare Jobs |
| Connect |
| Send Job |
| Get Job |
| Panel Info |
| Security Key |
| About |
| Help On |

# 5.0 Job Tree and Details Pane

This section covers the following components of the Configurator:

- Job Details
- Details Pane
- Bypass Groups
- Output Zone
- Main Display
- Display Adder
- Dialer
- Common System Status
- Input Summary and Output Summary

## 5.1 Job Details

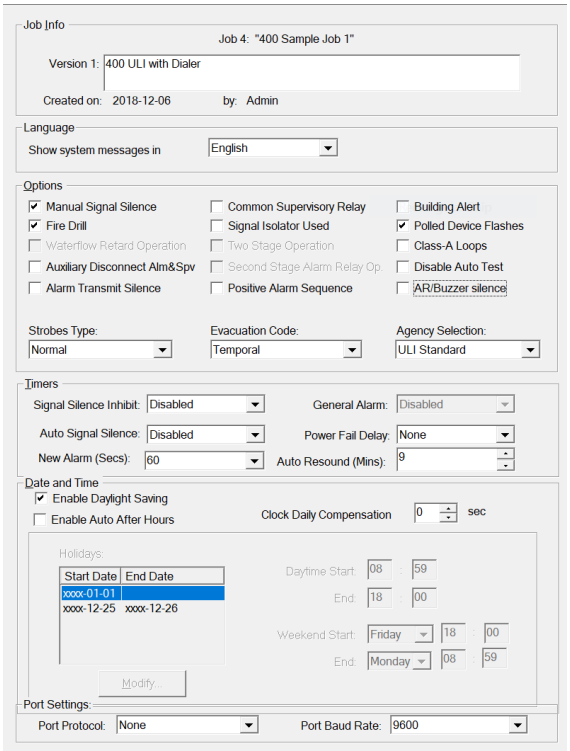


**Figure 41 Job Details**

### 5.1.1 Job Info

This section shows details of the job's name, number, creation date and author. The multi-line comments field can be edited and will become part of the job's version history.

### 5.1.2 Language

This section specifies the language used to display system messages on the front LCD display and on any LCD annunciator. User defined tags and messages are not affected.

### 5.1.3 Options

**Table 9 Job Options**

| Name | Description |
|---|---|
| **Manual Signal Silence** | Check this option to enable the panel's Signal Silence switch. |
| **Fire Drill** | Check this option to enable the panel's Fire Drill switch. |
| **Waterflow Retard Operation** | Check this option to perform a retard operation for initiating circuits configured as waterflow. If this option is unchecked, all the initiating circuits configured as waterflow act as non-verified alarms. |
| **Auxiliary Disconnect Alarm and Supervision** | Check this option to make the auxiliary disconnect operation disconnect alarm and supervisory relays. If this option is unchecked, the auxiliary disconnect operation has no effect on the alarm and supervisory relays. |
| **Alarm Transmit Silence** | Check this option to cause the Alarm Transmit and Auxiliary Alarm Relay to reset on Signal Silence rather than on the Reset switch. |
| **Common Supervisory Relay** | Check this option to make the common supervisory relay act as a common alarm relay. |
| **Signal Isolator Used** | Check this option if isolators are present on the loop 0 powered output circuits. |
| **Two Stage Operation** | Check this option to configure the system as two stage. If this option is unchecked, the system is single stage (FX-401 only). |
| **Second Stage Alarm Relay Operation** | Check this option to use the common alarm relay for second stage only of a two stage system. If this option is unchecked, the common alarm relay is used for both stages (FX-401 only). |
| **Positive Alarm Sequence** | Check this option to enable the Positive Alarm Sequence feature. It only applies to alarm input devices with the PA flag (F2) set. This feature cannot be enabled if Two Stage Operation is enabled. |
| **Building Alert** | Check this option to cause the panel to produce alert sounds on building (monitor) in/out activation. |
| **Polled Device Flashes** | Check this option to cause device LEDs to flash when polled. |
| **Class-A Loop** | Check this option if the addressable loop on the base panel operates in class A mode. |
| **Disable Auto Test** | Check this option to enable the NFPA device periodical self-test. |

**Table 9 Job Options (Continued)**

| Name | Description |
|---|---|
| **AR/Buzzer Silence** | Check this option to change the Buzzer Silence button on the panel to Auxiliary Reset.<br>If this option is enabled, you can silence the buzzer by pressing any button except the ones listed below.<br>• General Alarm<br>• Signal Silence<br>• Aux Reset (previously Buzzer Silence)<br>• Aux Disconnect<br>• Fire Drill<br>• System Reset |
| **Strobes Type** | Specify the Strobe Type that should be used on the panel.<br>• Gentex<br>• System Sensor<br>• Mircom<br>• Wheelock |
| **Evacuation Code** | Specify the Evacuation Code that should be used on the panel.<br>• Continuous<br>• March Time<br>• Temporal<br>• California |
| **Agency Selection** | Specify the Agency Standard that should be used on the panel.<br>• ULI Standard<br>• ULC Standard |

### 5.1.4 Timers

**Table 10 Timers**

| Timer Type | Possible Settings |
|---|---|
| **Signal Silence Inhibit** | Use this function to inhibit the Signal Silence button for a desired length of time. The time period should expire before the signals may be silenced.<br><br>Disabled, 10, 20, 30 seconds, 1 minute. |
| **Auto Signal Silence** | Use this function to set the time period for which the indicating circuits sound before they are automatically silenced. This timer cannot be set shorter than then General Alarm or Signal Silence Inhibit timers.<br><br>Disabled, 5, 10, 15, 20, 30 minutes. |
| **New Alarm (Secs)** | This feature is not used in UL applications.<br><br>This feature is used to satisfy the requirements of Division B, Part 3.2.4.18 of the National Building Code of Canada 2015, and the Ontario Building Code 2016 section 3.2.4.20(13), with respect to automatic suite silence. Signals that are correlated to the **New Alarm Active** Common System Status go active for the indicated amount of time and then go silent. The alarm continues to play on the outputs correlated with the zone or input that started the alarm.<br><br>10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120 seconds. |
| **General Alarm** | On a two stage system, the stage one alarm (alert) will change to the stage two alarm (general alarm) after this amount of time. This timer must be shorter than the Auto Signal Silence timer. This timer is disabled unless Two Stage Operation is selected.<br><br>Disabled, 5, 10, 20, 30 minutes. |
| **Power Fail Delay** | This feature allows a programmed delay before the AC fail trouble is transmitted by the optional PR-300.<br><br>0, 1, 2, 3 hours. |
| **Auto Resound (Mins)** | This feature is not used in UL applications.<br><br>This feature is used to satisfy the requirements of Division B, Part 3.2.4.18 of the National Building Code of Canada 2015, and the Ontario Building Code 2016 section 3.2.4.20(13), with respect to automatic suite silence. This timer starts when the New Alarm timer expires. It specifies the time after which the signals that are correlated to the **Auto Suite Resound** Common System Status will activate again if the alarm remains unacknowledged.<br><br>5, 6, 7, 8, 9, 10, 11, 12 minutes. |

### 5.1.5 Date and Time

**Table 11 Date and Time**

| Name | Description |
|---|---|
| **Enable Daylight Savings** | Check this box to enable automatic change to and from daylight saving time. |
| **Clock Daily Compensation** | Specify the number of seconds (signed) to be applied daily to the panel clock. |
| **Enable Auto After Hours** | Check this box to enable After Hours operation. If After Hours operation is enabled, then you can change the detector sensitivity for the times designated as After Hours (the **Sens B** column; see section 5.2 on page 41).<br>Use the following controls to configure after hours settings. Holidays, nighttime, and weekends are considered after hours. |
| **Holidays - Modify** | Compose a new holiday definition in the **YYYY MM DD** edit boxes and press **Add** holiday. You can specify recurring holiday by using wild cards. For further instructions on adding and deleting holidays see section 5.1.6. |
| **Daytime Start and End Hours** | Specify when daytime begins and ends. |
| **Weekend Start and End Hours** | Specify when the weekend begins and ends. |

### 5.1.6 Holidays

This dialog allows you to add and remove holiday definitions for use when a panel is configured by checking the **Enable Auto After Hours** option.

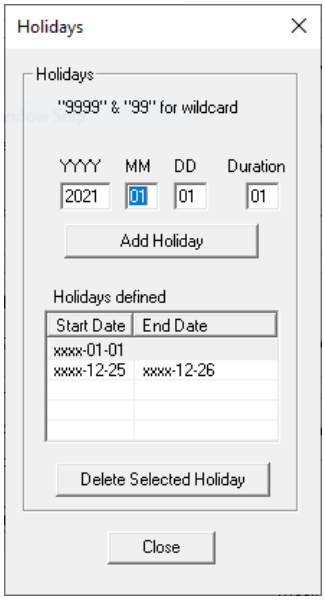


**Figure 42 Holidays Window**

**To add a new holiday**

1. Compose a new holiday definition in the **YYYY MM DD** edit boxes.
2. If the holiday lasts longer then one day change the value in the **Duration** edit box to the desired length.
3. Click **Add Holiday**.

   The holiday appears in the Holidays defined list.

**To specify recurring holidays**

Recurring holidays can be specified by using wild cards.

For a holiday that happens once a year enter 9999 in the **YYYY** edit box.

- For example, 9999 01 01 for New Years Day.

Enter 99 for a month or day to specify a recurring holiday.

- For example, 9999 99 01 to specify that the first of every month is a holiday.
- For example, 9999 07 99 to specify that the plant is shut down for the whole of July for summer vacations.

**Note:** The program prevents you from entering duplicate holidays, but does not check for "nested" holidays.

As holidays are added or removed, the list on the "parent" form is maintained to be in agreement. An error message is displayed if the limit for the total number of holidays would be exceeded.

**To remove a holiday**

1. Select the desired date from the Holidays defined list and press **Delete Selected Holiday**.
2. Press **Close** to return to the Job Details form.

### 5.1.7 Port Settings

**Table 12 Port Settings**

| Name | Description |
|---|---|
| **Port Protocol** | None, Printer, OpenGN |
| **Port Baud Rate** | 2400, 4800, 9600, 19200 |

## 5.2 Details Pane

The details pane display the hard wired circuits in loop 0 and the addressable devices in loop 1 (and loops 2 and 3 on the FX-401). Table 13 shows the information available in the details pane. In general, the columns are the same for both hardwired and addressable loops.Some columns containing advanced information are normally hidden. They are listed as **Visible: No** in Table 13.

To show a hidden column, move the cursor between the column headings until it turns into a vertical line with two horizontal arrows, like this: 

Then click and drag the edge of the column to the left.

**Table 13 Loop Details**

| Column | Visible | Description |
|---|---|---|
| **Addr** | Yes | MIX-4000 series device addresses are in the form **n.n**. See section 6.4.1 on page 53. |
| **Lp** | No | Loop Number. |
| **Ckt No** | No | An internal, sequentially assigned number. One set for inputs, another for outputs. |
| **Device** | Yes | Conventional: fixed hardware loop circuits.<br>Addressable: chosen when adding the device. |
| **Options** | Yes | The options depend on the type of device. |
| **Type** | Yes | The process type of the device. The list of types depends on the device. |
| **F1** | Yes | **NS**: Non Silenceable - used on inputs and supervised outputs.<br>**NB**: Non Bypassable - used on relays. |
| **F2** | No | **GA**: Second Stage Alarm - used in a two stage system.<br>**PA**: Positive Alarm - the positive alarm sequence applies to inputs with this flag. |
| **F3** | Yes | **AR**: Auxiliary Reset required - used on relays. A relay with the AR flag will be latched after activation and will stay latched after system reset. To clear the activation, press the Auxiliary Reset switch (see "AR/Buzzer Silence" on page 38).<br>**CA**: Class A wiring - used on Dual Input Modules and Dual Input Mini Modules. It indicates that the wiring of this device is Class A. |
| **F4** | Yes | **NF**: No flash - the LED will not flash during normal polling. |
| **Sens** | Yes | The sensitivity of various sensors. Displays the percentage equivalents of internal absolute values. Takes into account jurisdiction (ULI vs. ULC).<br>The number represents the amount of smoke that will trigger an alarm. A lower number means the sensor will be more sensitive. |
| **Sens B** | No | The after hours and night time sensitivity of sensors in a system configured to have after hours operation.<br>The number represents the amount of smoke that will trigger an alarm. A lower number means the sensor will be more sensitive. |
| **Tag (Line1 and 2)** | Yes | The text of the tag, in two 20 character fields, representing the lines displayed on the front panel when an event occurs. |
| **Delay** | Yes | The time in seconds for delaying the activation of output devices. |

### 5.2.1 Change Device Information in the Loop Details

1. Double-click in the column of the option you want to change (Figure 43).
2. Enter the new value or select it from the menu that appears.

**Note:** Not all the options are editable. The editable options depend on the type of device.

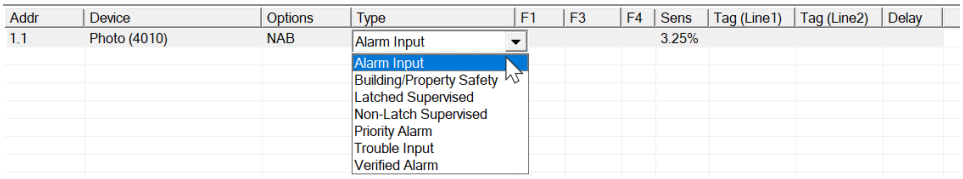


**Figure 43 Double-click in the loop details to change device information**

## 5.3 Bypass Groups

Add devices to a bypass group if you want to bypass the devices simultaneously. See section 6.7 on page 57 for instructions on configuring a display adder to operate a bypass group.

**Table 14 Bypass Groups**

| Name | Description |
|---|---|
| **No.** | Number of the bypass group. |
| **Tag** | Label of the bypass group. |

## 5.4 Output Zone

An output zone contains addressable output devices that you want to activate simultaneously.

There are three types of addressable output devices:

- Sounder base
- Relay base
- Relay modules and supervised output modules

There are several requirements for output zones:

- An output zone must be correlated to devices of the same type. For example, an output zone should not be correlated to a mix of sounder bases and relay bases.
- All devices in an output zone must be on the same loop.
- Output devices that are correlated to an output zone cannot be correlated to anything else.
- An output zone must be correlated to an input or system status.

**Table 15 Output Zones**

| Column | Description |
|---|---|
| **Addr.** | Address of the output zone. |

**Table 15 Output Zones (Continued)**

| Column | Description |
|---|---|
| **Type** | The process type of the output zone. |
| **F1** | **NS**: Non Silenceable - used on Signal or Strobe type. |
| **F2** | **AR**: Auxiliary Reset required - used on Relay type. |
| **Tag** | The text of the tag, in a 20 character field. |

**Note:** Output devices that are configured as the **Signal** or **Strobe** types are correlated to Fire Drill and Total Evacuation automatically. In order to add these devices to an output zone, delete their other correlations first.

### 5.4.1 Add Devices to an Output Zone

1. Click **Output Zone** in the Job Tree under **Base I/O**.
2. Click **Insert** in the menu bar, then click **Add Zone**.

   The Add Output Zone window appears.

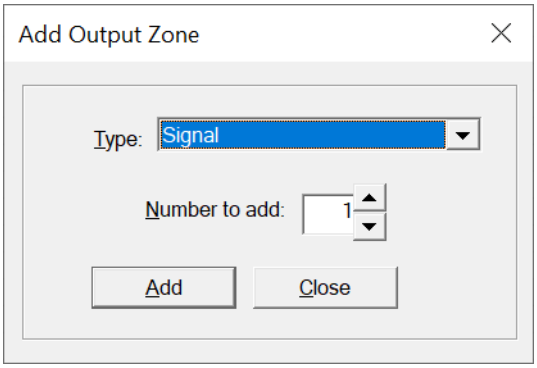


**Figure 44 Add Output Zone**

3. Enter the following information**:**

**Table 16 Add Output Zone**

| Name | Description |
|---|---|
| **Type** | Signal, Relay or Strobe. |
| **Number to Add** | Specify how many output zones to add by changing the **Number to add** value. |

4. Click **Close**.
5. Select the new output zone.
6. Click **Insert** in the menu bar, then click **Add Correlations**.

   The **Select items to add** window appears.

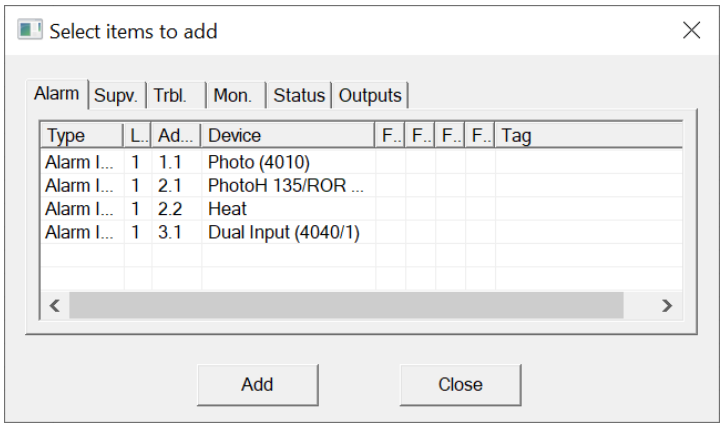


**Figure 45 Select items to add to output zone**

7. Select the output devices that you want to add. To select more than one device, hold down the Ctrl key and click the devices.
8. Click **Add**.
9. Select the input devices or system statuses that you want to correlate to the output zone.
10. Click **Add**.
11. Click **Close**.

## 5.5 Main Display

This window appears in the top, right pane when the Main Display item is selected in the Job Tree.

**Table 17 Main Display**

| Name | Description |
|---|---|
| **User Messages** | System Normal: specify the message to display on the front panel LCD when the system is currently normal (no alarm or trouble). |
| **Passcodes** | Level 1, 2 and 3: Specify the passcode for each level of access. Passcodes must be numeric and a maximum of 20 digits long. |

**Table 17 Main Display (Continued)**

| Name | Description |
|---|---|
| **Access Levels** | Specify the level of access for various front panel actions.<br>Items assigned level 0 do not require a passcode.<br>The level 1 passcode has the lowest permission, and the level 3 passcode has the highest permission.<br>For example, if you assign Loop Bypass the level 1 passcode, then a technician can access the loop bypass feature on the panel with the level 1, 2 and 3 passcodes.<br>If you assign Loop Bypass the level 2 passcode, then a technician can access loop bypass with the level 2 and 3 passcodes, but not the level 1 passcode.<br>If you assign Loop Bypass the level 3 passcode, then a technician can access loop bypass with the level 3 passcode only.<br>Once a technician enters a passcode, she can access other items in the menu without entering the passcode again, as long as the item is assigned the same passcode level or lower, and as long as she does not exit the Operation or Configuration menu. |

## 5.6 Display Adder

This list appears in the top right pane when a display adder is selected in the Job Tree. The list displays items (LEDs and switches) on the selected Display Adder.

**Table 18 Display Adder Info**

| Name | Visible | Description |
|---|---|---|
| Idx | Yes | Index: the position of the item on the adder. |
| CPU | No | The CPU Number of the annunciator to which the adder is attached. |
| Unnamed | Yes | Linked Item: contains an asterisk if the item shares the same LedGrp with other items. This means that correlations to one such item are added to all linked items. Linked Items can be created when Paste Special is used. The linked items can be viewed with the Linked Items dialog. |
| Frame | No | The Frame Number. An adder may contribute several frames to an annunciator. The frame numbers are zero based. |
| LED | No | The number (zero based) of the first LED of a logical group. For example, a RAX-1048TZDS on the FX-401 has two LEDs per point. This column shows 0 for Idx 0, 2 for Idx 1, etc. Due to the way the LEDs are physically arranged on some adders, the LED numbers are in irregular sequences. |
| Sw | No | The switch number (if any) associated with the Idx. |
| Type | Yes | The type of LED or switch. Double-click the type to change it. The list of types depends on the device. |
| Assignment | Yes | Dependent on the type. |

**Table 18 Display Adder Info (Continued)**

| Name | Visible | Description |
|---|---|---|
| F1 | Yes | Not used. |
| F2 | Yes | Not used. |
| F3 | Yes | Not used. |
| Tag 1 | Yes | Except for System Led and Bypass Zone, a 20 character tag can be entered. This tag identifies the control in messages. |
| Tag 2 | Conditional | Not used. |

## 5.7 Dialer

This form is displayed when the Dialer tree item is selected. It allows you to configure the Dialer. The dialer can dial out on two phone lines. You must configure an account and specify the line attributes for both. Line 2 can dial a cell phone. If this is the case the auto test can be reduced from daily to monthly.

### 5.7.1 Account 1

**Table 19 Dialer Account 1**

| Name | Description |
|---|---|
| **Account ID** | Six digit decimal for the SIA report formats and four digit hexadecimal for Contact ID. |
| **Telephone** | Text Field for telephone number. |
| **Report Format** | Choose from SIA110, SIA300, Contact ID. |

### 5.7.2 Account 2

**Table 20 Dialer Account 2**

| Name | Description |
|---|---|
| **Account ID** | Six digit decimal for the SIA report formats and four digit hexadecimal for Contact ID. |
| **Telephone** | Text Field for telephone number. |
| **Report Format** | Choose from SIA110, SIA300, Contact ID. |

### 5.7.3 Line 1

**Table 21 Dialer Line 1**

| Name | Description |
|---|---|
| **Dial Using** | Tone or Pulse. |
| **Wait** | Check to wait for dial tone before dialling. |

### 5.7.4 Line 2

**Table 22 Dialer Line 2**

| Name | Description |
|---|---|
| **Dial Using** | Tone or Pulse. |
| **Wait** | Check to wait for dial tone before dialling. |

### 5.7.5 Report Priority

**Table 23 Dialer Report Priority**

| Name | Description |
|---|---|
| **Alarm** | Choose one of the two accounts to use to report Alarms. |
| **Supv** | Choose one of the two accounts to use to report Supervisory alerts. |
| **Trouble** | Choose one of the two accounts to use to report Troubles. |

### 5.7.6 Timers

**Table 24 Dialer Timers**

| Name | Description |
|---|---|
| **AC loss delay** | 0-20 hours. Use this menu to delay the reporting of AC loss trouble on the dialer for the programmed time period. |
| **Line 2 cellular test** | To comply with UL 864 10th edition, leave this setting unchecked.<br>Use this menu to set the test report date for the cell phone setup. Uncheck this box if there is no test reporting for a cell phone, or if the phone line is a regular line. Set Day of month from 1 to 28 to schedule a test for Line 2 on a certain day of the month. See section 5.7.7 for more information.<br>When a cell phone service is employed for the panel, it should only be connected to telephone line #2 CO interface. Also, the dial tone detection feature of Line 2 should be disabled for cell phone application. |
| **Auto test at** | Use this function to set the time for the automatic test. When this test is performed, the test report is sent to the monitoring station. To comply with UL 864 10th edition, this test must be performed at least once every 6 hours.<br>The Auto test time can be configured to:<br>12:00 a.m. to 5:59 a.m.: test every 24 hours<br>6:00 a.m. to 11:59 a.m.: test every 6 hours<br>12:00 p.m. to 23:59 p.m.: test every 12 hours<br>If the Line 2 cellular test is disabled, then the test alternates between Line 1 and Line 2. See section 5.7.7 for more information. |

### 5.7.7 Lines 1 and 2 Test Times

If the Line 2 cellular test is disabled, then the dialer alternates between Lines 1 and 2 when performing the automatic test. If the Line 2 cellular test is enabled, then the automatic test is

performed on Line 1 except on the day of the Line 2 cellular test, when it is performed on Line 2. See examples in Table 25.

**Table 25 Lines 1 and 2 Test Times**

| Line 2 cellular test | Auto test at | Line 1 Tested | Line 2 Tested |
|---|---|---|---|
| Disabled | 00:30 | 12:30 a.m. every other day (alternates with Line 2) | 12:30 a.m. every other day (alternates with Line 1) |
| Disabled | 6:00 | 6:00 a.m. and 6:00 p.m. | 12:00 p.m. and 12:00 a.m. |
| Disabled | 12:00 | 12:00 p.m. | 12:00 a.m. |
| Day of month: 15 | 00:30 | 12:30 a.m. every day except on the 15th of the month | 12:30 a.m. on the 15th of the month |
| Day of month: 15 | 6:00 | 6:00 a.m., 12:00 p.m., 6:00 p.m., and 12:00 a.m. every day except on the 15th of the month | 6:00 a.m., 12:00 p.m., 6:00 p.m., and 12:00 a.m. on the 15th of the month |
| Day of month: 15 | 12:00 | 12:00 p.m. and 12:00 a.m. every day except on the 15th of the month | 12:00 p.m. and 12:00 a.m. on the 15th of the month |

### 5.7.8 Dialer

**Table 26 Dialer**

| Name | Description |
|---|---|
| **Line Retries** | Specify the number of retries to make (5-10). |
| **Rings** | Specify the number of rings when dialing in to configure. Warning: if set to zero the next dial in session will not be able to connect. |
| **Mode** | Choose between DACT and UDACT. |
| **Enable** | Uncheck this box if you wish to set the dialer to the disabled state when you send the job to the panel. If you receive a job from the panel when the dialer was temporarily disabled then this check box will be unchecked. The dialer is enabled by default. |
| **Aux disconnect** | If enabled, the dialer blocks the alarm and supervisory events from being reported after the auxiliary disconnect button is pressed. |

## 5.8 Common System Status

This list appears in the top right pane when the Common System Status item is selected in the Job Tree.

System Statuses are virtual inputs that can be correlated to outputs. For example:

- Correlate a signal circuit to operate as a power supply. (using Init Done).
- Customize the Fire Drill operation.
- Correlate a relay to operate on Reset Command (using Sys Reset).

## 5.9 Input Summary and Output Summary

The Job Tree always contains an Input Summary and Output Summary item. Select either of these items to see a list of all of the circuits on the job.

The Input Summary gives an Input UDACT reference number and tag required for programming by the Central Monitoring Station. On products that support them, this list may include Correlatable Switches. These do not have a value in the Loop and Address columns.

The Output Summary gives an output UDACT reference number and tag required for programming by the Central Monitoring Station.

# 6.0 Add Items to the Job

## 6.1 Add a Loop Controller (FX-401 Only)

**To add an ALC-480 Dual Loop Adder**

1. Click **Insert**, then click **Add Loop Controllers**.

   Loop 2 and Loop 3 appear in the **Job Tree** under **Base I/O**.

## 6.2 Add Annunciator

**To add an annunciator**

1. Click **Insert**, then click **Add Annunciators**.
2. In the Add Annunciator window enter the following information:

**Table 27 Add Annunciator**

| Name | Description |
|---|---|
| **Select Type** | Select the type of Annunciator to be added to the job. |
| **Number to add** | Edit this number to add more than one Annunciator to the job. |
| **Tag** | Not used. |
| **Add** | Click **Add** to add the annunciator. The Job Tree shows the new Annunciator. If the limit for the job is exceeded an error message appears. |

3. Click **Close** to close the Add Annunciator window.

## 6.3 Add Correlations

The **Add Correlations** window shows a tab for every category of circuit or display item that can be correlated to the items selected in the Details Pane.

The content of each tab is updated as correlations are added or deleted so that the window always shows the items that are available.

### To add correlations

1. From the **Details Pane** right click an item and select **Add Correlations**.

   The Add Correlations window appears.

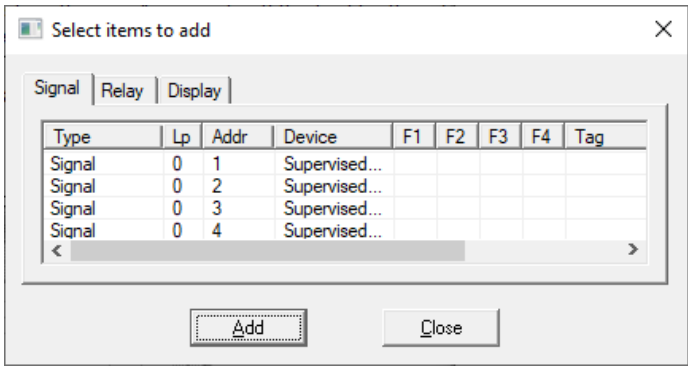


**Figure 46 Add Correlations Window**

2. Select the items to be correlated, then click the **Add** button.

   You can hold down the Ctrl key to select multiple rows.

3. Click **Close** to close the window.

## 6.4 Add Device

### To add devices

1. In the Job Tree, select a loop.
2. Click **Insert**, then click **Add Device**.

   The Add Devices window appears.

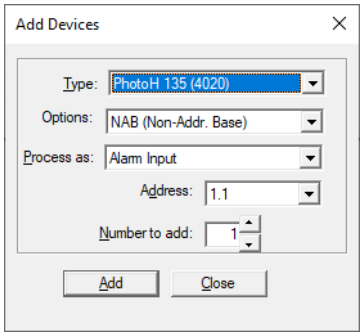


**Figure 47 Add Devices window**

3. Enter the following information:

**Table 28 Add Device**

| Name | Description |
|---|---|
| **Type** | The major device type. |
| **Options** | The available options depend on the device. |
| **Process As** | Choose the type of alarm that you want to associate with this device. |
| **Address** | Specify the address for the new device. This defaults to the lowest available address for the chosen type. |
| **Number to Add** | Specify how many devices to add by changing the **Number to add** value. The Configurator attempts to allocate the devices sequentially, starting with the address you selected. |

4. Click **Add**.

   If there are not enough addresses, an error message appears.

   - Click **OK** to cancel the procedure. The Configurator does not add any devices.

   After the operation is complete, the window remains open. The Address value is adjusted to account for the devices just added.

   If there are no available addresses for the chosen Type, then the **Add** button is disabled.

5. Click **Close** to close the window.

### 6.4.1 Device Addressing

MIX-4000 series device addresses are in the form **n.n**.

- The number before the period represents the address that is set on the device with the programming tool (the physical address).
- The number after the period is a subaddress. This is a virtual address that the Configurator uses to refer to the device. A device has one physical address but can have many subaddresses.

For example, when you add a Photo (4010) with the physical address **1**, it appears as an entry with the address **1.1**.

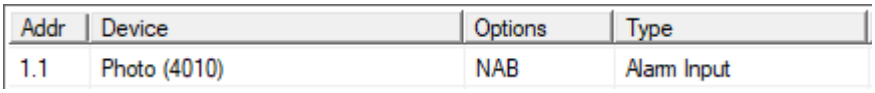


**Figure 48 Photo (4010) with the address 1**

Some devices have two or more subaddresses. When you add one of these devices, additional subaddresses are automatically created for the additional inputs or outputs.

For example, a PhotoH 135 (4020) with the address **1** has the following entries:

- PhotoH 135 (4020): 1.1 (first input)
- Heat: 1.2 (second input)

| Addr | Device | Options | Type |
|---|---|---|---|
| 1.1 | PhotoH 135 (4020) | NAB | Alarm Input |
| 1.2 | Heat | | Alarm Input |

**Figure 49 PhotoH 135 (4020) with the address 1**

A class B Dual Input (4040/1) with the address **1** has the following entries:

- Dual Input (4040/1): 1.1 (first input)
- Input: 1.2 (second input)

| Addr | Device | Options | Type |
|---|---|---|---|
| 1.1 | Dual Input (4040/1) | Class-B | Alarm Input |
| 1.2 | Input | | Alarm Input |

**Figure 50 Class B Dual Input (4040/1) with the address 1**

A class B 12-Input (4040-M) with the address **1** has the following entries:

- 12-Input (4040-M): 1.01 (first input)
- Input: 1.02 (second input)
- Input: 1.03 (third input)
- Input: 1.04 (fourth input)
- Input: 1.05 (fifth input)
- Input: 1.06 (sixth input)
- Input: 1.07 (seventh input)
- Input: 1.08 (eighth input)
- Input: 1.09 (ninth input)
- Input: 1.10 (tenth input)
- Input: 1.11 (eleventh input)
- Input: 1.12 (twelfth input)

| Addr | Device | Options | Type |
|---|---|---|---|
| 1.01 | 12-Input (4040-M) | Class-B | Alarm Input |
| 1.02 | Input | | Alarm Input |
| 1.03 | Input | | Alarm Input |
| 1.04 | Input | | Alarm Input |
| 1.05 | Input | | Alarm Input |
| 1.06 | Input | | Alarm Input |
| 1.07 | Input | | Alarm Input |
| 1.08 | Input | | Alarm Input |
| 1.09 | Input | | Alarm Input |
| 1.10 | Input | | Alarm Input |
| 1.11 | Input | | Alarm Input |
| 1.12 | Input | | Alarm Input |

**Figure 51 Class B 12-Input (4040-M) with the address 1**

### 6.4.2 Add a Base to a Device

When you add some devices (for example the Photo (4010)), you have the option to add a base to the sensor head.

- **NAB (Non-Addr. Base):** non-addressable base
- **ASB (Addr. Sounder Base):** addressable sounder base

- **ARB (Addr. Relay Base):** addressable relay base
- **ALB (Addr. Low-Freq Base):** not used

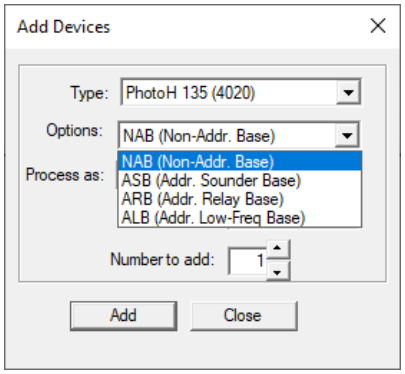


**Figure 52 Base selection**

When you add a device with an addressable base, the base is assigned a subaddress. For example, a Photo (4010) at address **1.1** has an addressable sounder base at **1.2**.

| Addr | Device | Options | Type |
|---|---|---|---|
| 1.1 | Photo (4010) | ASB | Alarm Input |
| 1.2 | Sounder | | Signal |

**Figure 53 Photo (4010) with addressable sounder base**

### 6.4.3 Add a Class A or Class B Device

Some devices have the option of being class A or class B. By default, these devices are class B.

For example, a Dual Input (4040/1) has two entries by default.

| Addr | Device | Options | Type |
|---|---|---|---|
| 1.1 | Dual Input (4040/1) | Class-B | Alarm Input |
| 1.2 | Input | | Alarm Input |

**Figure 54 Class B Dual Input (4040/1)**

If you select **Class A** in the **Options** menu when you add the device, then it has one entry.

| Addr | Device | Options | Type |
|---|---|---|---|
| 1.1 | Dual Input (4040/1) | Class-A | Alarm Input |

**Figure 55 Class A Dual Input (4040/1)**

### 6.4.4 Convert a Device to Class A or Class B

To convert a class B device to class A, follow these steps:

1. Double-click **Class B** in the **Options** column for the device.
2. Select **Class A** in the menu that appears.

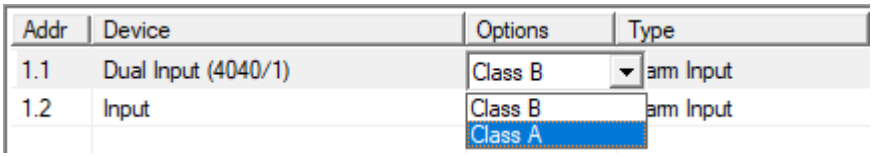


**Figure 56 Convert a device to class A**

The Configurator deletes subaddresses as necessary.

To convert a class A device to class B, select **Class B** in the **Options** column. The Configurator adds subaddresses as necessary.

### 6.4.5 Add a Manual Station

To add a manual station, for example MS-402MP or MPS-810MP(U), follow these steps:

1. In the **Add Devices** window, select **Dual Input (4040/1)** in the **Type** menu.
2. Click the **Options** menu, and select **Class A** for a single stage manual station and **Class B** for a two stage manual station.
3. Select **Alarm Input** in the **Process as** menu.
4. Click **Add**.

For example, to add a two stage manual station like MS-402MP, add **Dual Input (4040/1)** and select **Class B** in the **Options** menu. The first input is the pull handle and the second input is the stage two key.

| Addr | Device | Options | Type |
|---|---|---|---|
| 1.1 | Dual Input (4040/1) | Class-B | Alarm Input |
| 1.2 | Input | | Alarm Input |

**Figure 57 Two stage manual station**

To add a single stage manual station like MPS-810MP(U), add **Dual Input (4040/1)** and select **Class A** in the **Options** menu.

| Addr | Device | Options | Type |
|---|---|---|---|
| 1.1 | Dual Input (4040/1) | Class-A | Alarm Input |

**Figure 58 Single stage manual station**

By default, **Dual Input (4040/1)** is added as class B. To convert a class B device to class A, follow the steps in section 6.4.4.

## 6.5 Add Display Adder

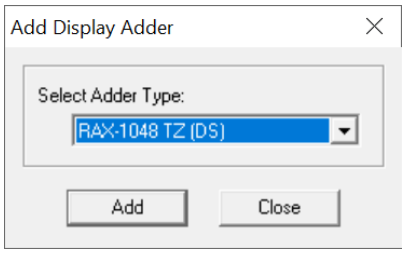


**Figure 59 Add Display Adder window**

**To add a display adder**

1. In the Job Tree, right-click one of the listed annunciators and select **Add Display Adder**. The Add Display Adder window appears.
2. From the drop down menu select the desired Display Adder.
3. Click **Add**.
4. Click **Close** to close the Add Display Adder window.

## 6.6 Add IPS-2424DS and IPS-4848DS

**Add an IPS-2424DS**

1. Select the annunciator or display adder that you want to add the IPS-4848 to.
2. Click **Insert** in the menu bar, then click **Add Display Adder**.
3. Select **24 Sw Adder** in the **Select Adder Type** pulldown menu.
4. Click **Add**.

**Add an IPS-4848DS**

1. Select the annunciator or display adder that you want to add the IPS-4848 to.
2. Click **Insert** in the menu bar, then click **Add Display Adder**.
3. Select **48 Sw Adder** in the **Select Adder Type** pulldown menu.
4. Click **Add**.

## 6.7 Configure IPS-2424DS and IPS-4848DS to Operate a Bypass Group

You can correlate any input or output device to a group, as well as an LED to indicate its status. After an LED is correlated to a bypass group, it will be used exclusively to indicate the status of that group and it can not be used for other purpose.

### Create a bypass switch

1. Select the **24 Sw Adder** or **48 Sw Adder**.

   By default, all the switches are unassigned.

2. Double-click **<unassigned>** in the **Type** column for a switch, and select **Byp Zone**.

   In Figure 60, switch **0** on the 24 Sw Adder is a bypass switch.

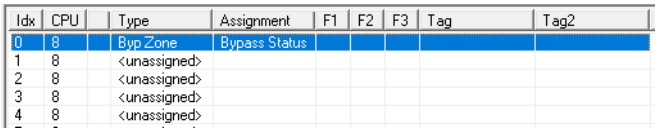


**Figure 60 Bypass switch**

### Create a bypass group

1. Select **Bypass Groups** under **Base I/O**.
2. Click **Insert** in the menu bar, then click **Add Group**.

   A new bypass group appears with the name **New Grp**.

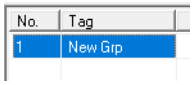


**Figure 61 New bypass group**

3. Double-click the name of the new group and type a descriptive name.
4. Right-click the bypass group, then click **Add Correlations**.

   The **Select items to add** window appears.

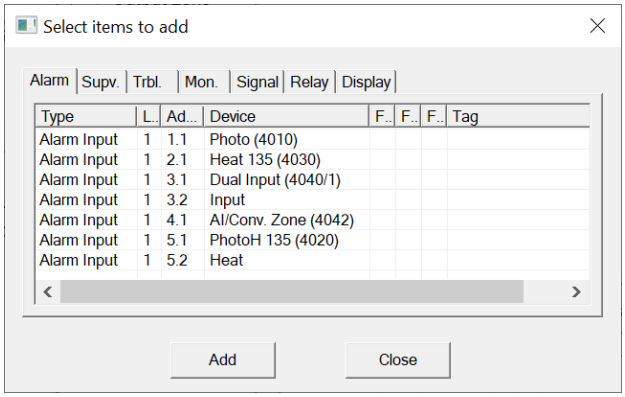


**Figure 62 Select items to add to bypass group**

5. Select the devices that you want to add. To select more than one device, hold down the Ctrl key and click the devices.
6. Click **Add**.
7. In the **Select items to add** window, click the **Display** tab and select the adder switch to assign to this bypass group, then click **Add**.

   Figure 63 shows the bypass switch created in "Create a bypass switch" on page 58

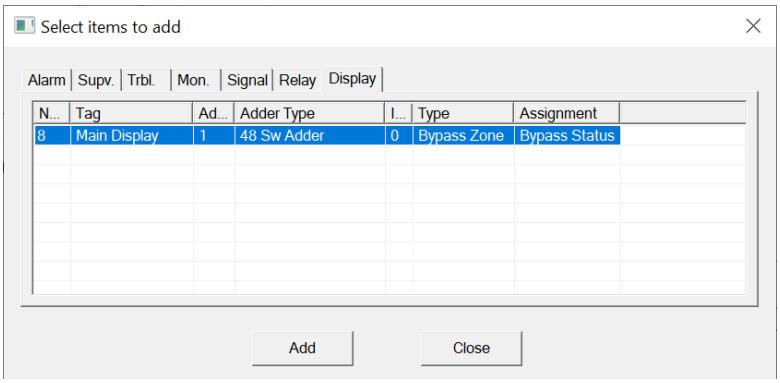


**Figure 63 Add switch to bypass group**

8. Click **Close**.

## 6.8 Delete Correlations

### To delete a correlation

1. Click the correlation, then click the **Edit** menu, then click **Delete Item**. Hold down the Shift key to select more than one correlation at once.
2. Click **Yes** to delete the correlation.

# 7.0 Manage the Database

The database stores all jobs and their information. You can back up, restore or compact databases.

## 7.1 Backup Database

The Backup Database command makes a copy of the Master Database.

**Note:** If the **Keep Only Latest Versions After Backup** option is enabled in **User Preferences**, old versions of each job in your main database will be deleted when you back up the database. Only the latest version of each job will be kept.

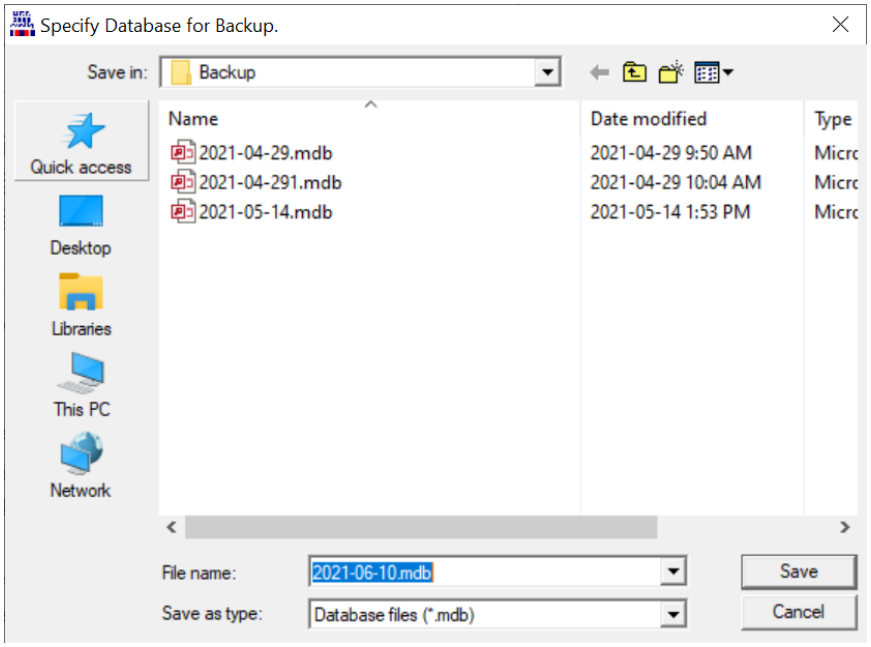


**Figure 64 Backup Database**

**To back up the database**

1. Click **File > Backup Database**. The file location specified in the User Preferences appears. The file name is in the form **YYYY-MM-DD.mdb**.
2. Click **Save**. A popup window appears notifying you of a successful backup.

The backup can be used by the **Restore Database** command to recover all of the jobs in the database. You can also use the Import command to recover selected jobs from a backup. Backup your Master Database often and store a copy of the resulting file on a CD or other media.

## 7.2 Restore Database

The Restore Database command reads a database file and imports every job found there, after first deleting all of the jobs in the current database. If the backup database was produced

by an older version of the configuration tool, all necessary conversion is performed. Conversion is sometimes necessary when a new version of the configuration tool is released. The install program makes a backup and instructs you to run Restore Database to convert all of your jobs.

**Warning: When you restore from an older backup you will lose any changes that have been made since the time of the backup.**

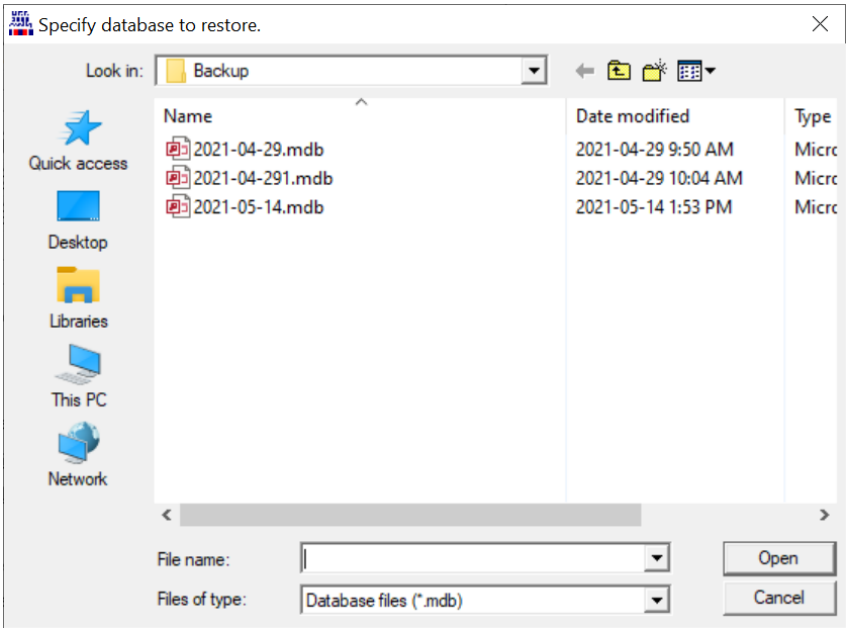


**Figure 65 Restore Database**

**To restore a database**

1. Click **File > Restore Database** and a warning appears.

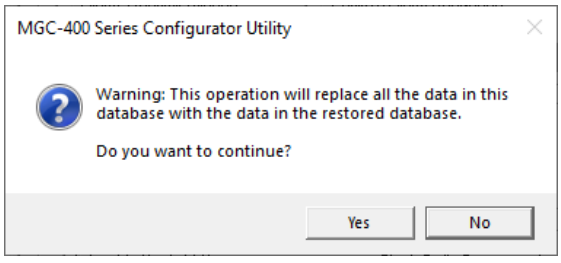


**Figure 66 Restore Database**

2. Click **Yes** to continue.
3. The file location specified in the User Preferences appears and the file name is in the form **YYYY-MM-DD.mdb**.
4. Select the desired database and click **Open**.

   A popup window appears notifying you of a successful restore.

## 7.3 Compact Database

A database that has been the subject of many deletions and additions can become fragmented and occupy more space than required. Compact Database runs a standard MS-Access utility to recover the space and improve performance.

**Note:** This may take several minutes for a large database.

**To compact a database**

1. Click **File > Compact Database**.

   A status window appears. There is no further notification.

# 8.0 Manage Jobs

## 8.1 Create a New Job

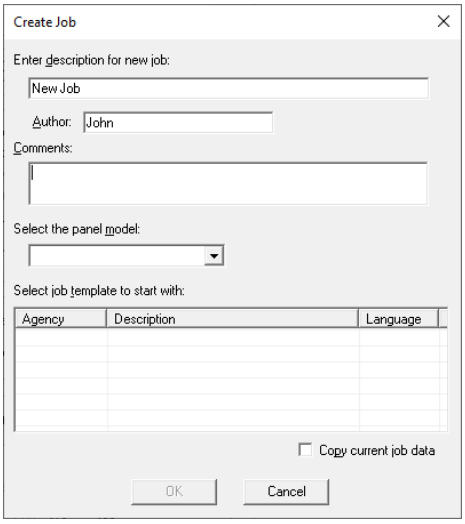


**Figure 67 Create Job window**

**To create a new job**

1. Click **Job**, then click **New Job**.

   The **Create Job** window appears.

2. Enter the information in Table 29, then click **OK**.

**Table 29 New Job**

| Name | Description |
|---|---|
| **Enter description for new job** | This name, which should be unique, identifies the job throughout its lifetime. Note that in a multi-product environment the same job name cannot be used for jobs of different products, even if you do not currently have access to all possible products. An error message appears if the name is not unique. The error message helps you identify duplicates that belong to other products or brands. |
| **Author** | The technician who is creating the new job. The default is automatically inserted but can be overridden. |
| **Comments (Must be entered)** | Enter a comment. It can span multiple lines. This becomes part of the job's version history. |
| **Model** | Choose the panel model for your new job. |
| **Template (optional)** | Select a template to start from. |
| **Copy current job data** | As an alternative to choosing a template and panel model, check this box to make a copy of the job which is currently open in the Configurator. |

## 8.2 Open Job

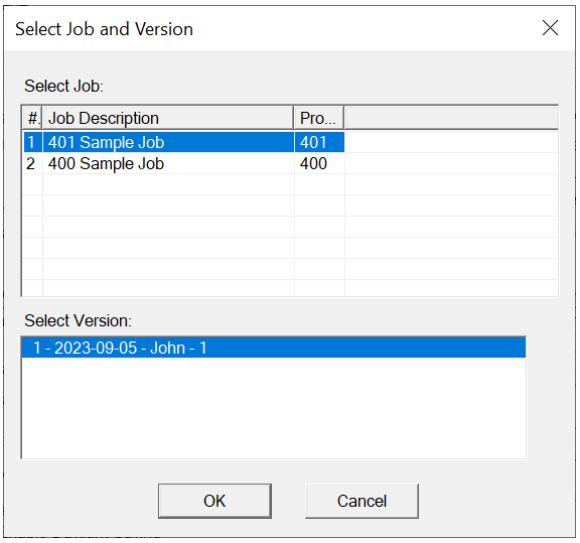


**Figure 68 Select Job and Version window**

The Open Job command lets you select a job and version in the database and open it. The Select Job list shows all of the jobs in the database. Click the column heading to sort the jobs by:

- Job Number
- Job Description
- Product (where more than one product is supported)

The Select Version list shows all of the versions of the selected job. This includes the date and a description.

**To open a job**

1. Click **Job**, then click **Open Job**.

   The **Select Job and Version** window appears.

2. Select the Job and click **OK**.

## 8.3 Import Job

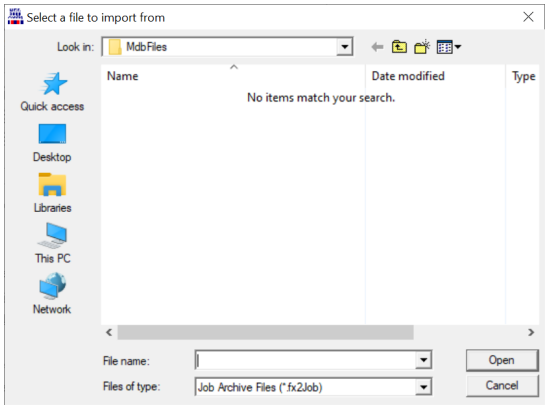


**Figure 69 Import Job window**

The Import Job command imports a selected job version from an external database or serialized job archive as created by the Export Job or Backup Database commands. and converts the job to the current version if necessary. Choose the type (MDB or Serialized Archive) and location of the file to read. The location defaults to the Job File folder specified in User Preferences.

If the selected type is MDB, then the Microsoft Access database (usually a database that resulted from a Backup Database) is opened. A list, similar to the Open Job window, displays jobs contained in the database.

The chosen job is copied to the current database. If the version of the source database is not too old (no forward conversion is possible) and is not younger than the current database, then any necessary conversion is performed. If the database version is not compatible, an error appears.

If the selected type is fx2job (a serialized archive, usually the result of Export Job) then the Jobs found in the archive's index are listed. The program converts the job to the current standard, and stores the job in the database.

If the same job (identified by its name) is already in the database, then the next highest version number is assigned to the job.

If a job with the same name is not on the database, then a new job is created.

**To import a job**

1. Click **Job > Import Job**.

   The **Select a file to import from** window appears.
2. Select the Job and click **OK**.

## 8.4 Export Job

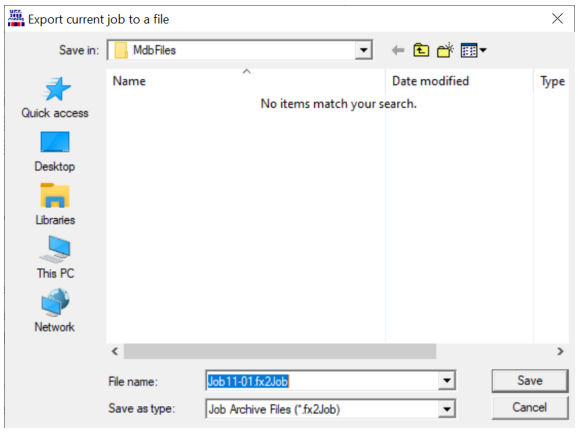


**Figure 70 Export Job window**

Use the Export Job command to share a job, for example between technicians. The fx2job format results in a very small file, suitable for electronic transmission.

By default, the file is given a name **Jobnn-vv** where **nn** is the job number and **vv** is the version. You can change the name to make it easier to identify the job.

### To export a job

1. Click **Job > Export Job** and the Export Job window appears.
2. Select the file type to export.

**Table 30 Export Job**

| Name | Description |
|---|---|
| **.mdb** | A Microsoft Access database containing a single job is produced. |
| **.fx2Job** | A compact archive file is produced. |
| **OpenGN** | Not used. |
| **OpenGN Phase II** | Select this file type to produce an XML file to import into OpenGN. |

3. Click **Save**.

## 8.5 New Version

**To create a new job version**

1. Click **Job > New Version**.

   The New Job Version window appears.

2. Enter the name of the technician making the change, any related comments and click **OK**.

## 8.6 Delete Job Version

Deleting the Job Version deletes the currently open Job from the Database. When a job is deleted, it will no longer be accessible from the Version History window.

**To delete the currently open job version**

1. Click **Job > Delete Job Version**.

   A window appears asking if you want to permanently delete the currently open version.

2. Click **OK**.

## 8.7 Version History

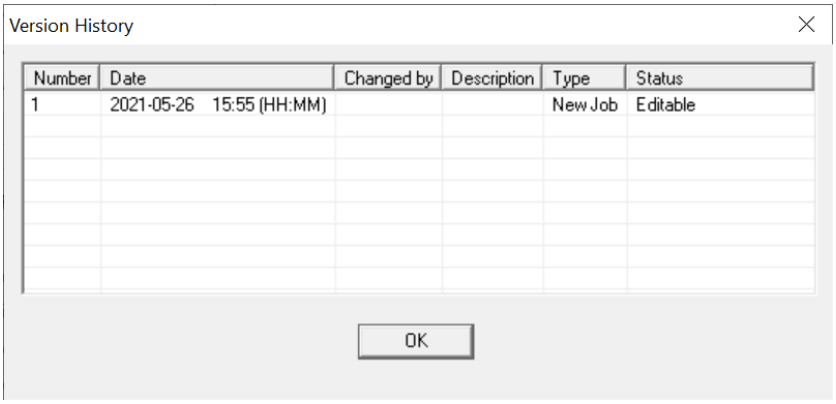


**Figure 71 Version History window**

The version history of the current job is displayed in list form, beginning with the most recent version.

**Table 31 Version History**

| Name | Description |
|---|---|
| **Number** | The version number. Each time a new version is created, either with the New Version command or by getting a job from the panel or an archive, a new version number is assigned. |
| **Date** | The date and time the version was created. |
| **Changed by** | The user who created the version. |
| **Description** | The description, which was entered when the new job version was created. |

**Table 31 Version History (Continued)**

| Name | Description |
|---|---|
| **Type** | Uploaded: the new job version was a result of a Get Job.<br>New Job: the user created a new version manually. |
| **Status** | Locked: the job has been sent to the panel and cannot be edited.<br>Editable: the job is editable. |

**To open the Version History Window**

1. Click **Job > Version History**. The version history window appears.
2. Click **OK** to close the window.

## 8.8 Compare Job Versions

For details on Comparing Jobs and Differences mode see section 12.0 on page 88.

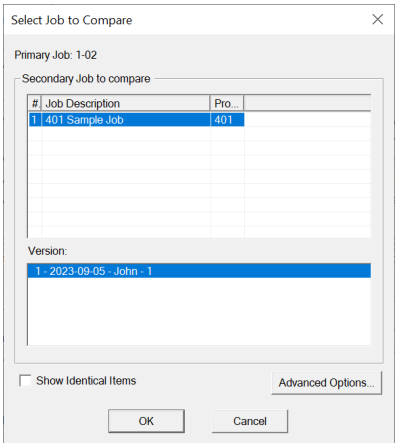


**Figure 72 Select Job to Compare window**

**Table 32 Select Job to Compare**

| Name | Description |
|---|---|
| **Primary Job** | This field lists the job number and version that the secondary job should be compared with. |
| **Secondary Job to compare** | Use the combination of Job and Version to select the secondary job. Normally you would choose a newer version of the same job. You cannot choose the same Job and Version for Primary and Secondary.<br>You can sort the list of secondary jobs by Job Number, Description or Product. |
| **Show Identical Items** | Check this box if you want to see not only changes, but also those items that stayed the same. Normally you would leave this unchecked. Differences are easier to see and Print generates less output if identical items are not included. |

**Table 32 Select Job to Compare (Continued)**

| Name | Description |
|---|---|
| **Advanced Options** | Click **Advanced Options** to open the Advanced Options window. Here you can change some of the more advanced filtering options. They are checked by default and in most situations do not need to be changed.<br><br>See section 8.8.1. |

**To compare jobs**

1. Click **Job > Compare Job Versions**.

   The Select Job to Compare window appears.

2. Select the Secondary Job, Version, if you would like to show identical Items and any Advanced Options. For more information see section 8.8.1.

3. Click **OK** to open Differences Mode.

## 8.8.1 Advanced Compare Options

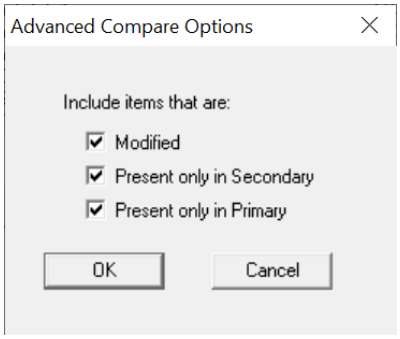


**Figure 73 Advanced Compare Options window**

**Table 33 Advanced Compare Options**

| Name | Description |
|---|---|
| **Modified** | Check this box to include any item that has been modified. (Modified means that it is the same adder, circuit, or switch but some attribute has been changed.) You should only uncheck this box if you do not want to see items that have been modified. |
| **Present only in Secondary Job** | Check this box to include items that are only present in the secondary job. This means that Loop Adders, Annunciators, Display Adders, and circuits that were not on the primary job are included. You should only uncheck this box if you do not want to have new additions reported. |
| **Present only in Primary Job** | Check this box to include items that were only present in the primary job. This means that Loop Adders, Annunciators, Display Adders, and circuits that were removed from the primary job are included. You should only uncheck this box if you do not want to have deletions reported. |

**Notes:** Filtering of **Present only in Secondary** and **Present only in Primary** do not apply when presenting the tree. The tree is shown in its entirety, regardless of these settings. The filtering is only applied to the Device, Display Item and similar lists. It is intended to make it easy to see what components have been physically added or removed from the job.

Correlations are not considered to be items in this context. If a correlation was added, then that is effectively a modification to the item that received the correlation.

If you check **Present only in Secondary**, or **Present only in Primary**, or both, but you do not check **Modified**, then the items that have only had correlation changes are not included.

## 8.9 Validate Job

**To validate a job**

1. Click **Job > Validate Job**.

   If there are errors with the job, a window appears with a message about the errors.

## 8.10 Edit Job

When you open a job, whether by getting it from the panel or opening it from the database, it is locked by default, and you must unlock it in order to edit it.

**Edit a job**

- Click **Job** > **Edit Job**.

If you try to edit a locked job that has not been sent to a panel, a message appears asking if you want to make it editable.

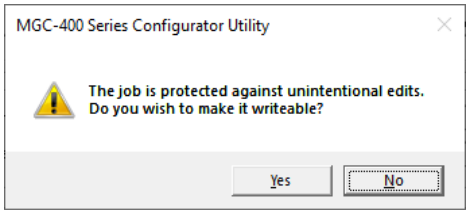


**Figure 74 This job is protected against unintentional edits**

- Click **Yes** to unlock the job.

If you try to edit a job that has been sent to a panel, a message appears saying that you should create a new version. See section 8.5 on page 67.

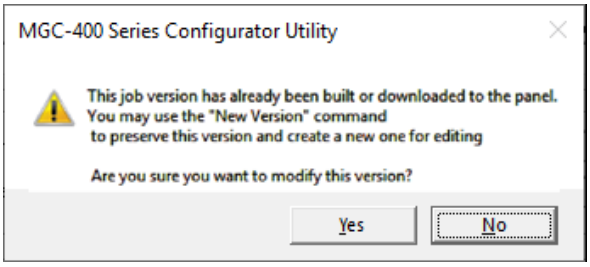


**Figure 75 This job version has already been built or downloaded to the panel**

# 9.0 Work with the Panel

## 9.1 Connect

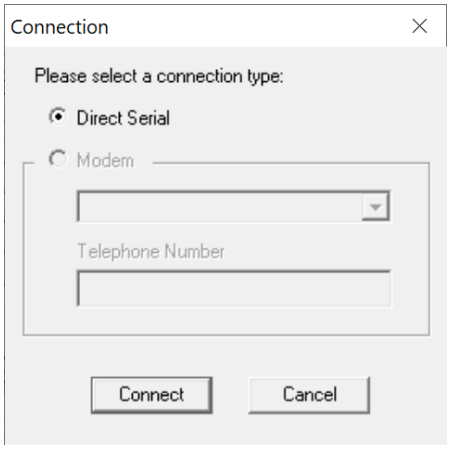


**Figure 76 Connection window**

**To connect to the panel**

1. Select a connection type.

**Table 34 Connection**

| Name | Description |
|---|---|
| **Direct Serial** | Select this option if you have connected a serial cable directly from the serial port (or USB or UIMA4) of your computer to the fire alarm panel. |
| **Modem** | Select this option if the fire alarm panel is capable of being programmed remotely. |
| **Telephone Number** | Enter the phone number to which the fire alarm panel is connected. |

2. Click **Connect**.

   After a connection has been established a window might appear saying that the panel time and the PC time do not match.

3. Click **Yes**.

   The **Update Panel Time** window appears.

4. Set the time and click **OK**.

   A window appears saying that the time has been updated.

5. Click **OK**.

## 9.2 Send Job

**To send a job to the panel**

1. Click **Panel > Send Job**.
2. Click **Yes**.

   Once the job has been successfully sent a confirmation window appears.
3. Click **OK**.

## 9.3 Get Job

**To get a job from the panel**

1. Click **Panel > Get Job**.

   The Create Job window appears.
2. Enter the job information and click **OK**.

   Once the job has been retrieved a confirmation window appears.
3. Click **OK**.

## 9.4 Panel Information

This command displays information on the panel and the Configurator, with options to view more detail. The information includes:

- The Product Version
- Name and Version of the job currently loaded on the panel
- Panel Model
- The Date it was sent
- The ESD and Tech who sent or owns the job. (For products secured with a key)
- Security Key SIN. (For products secured with a key)
- Config Version
- Date and Time Last Changed
- Number of times auto configured
- The Panel Time

Click the **Update** button to update the panel time with the time from the Configurator for those products that support the feature.

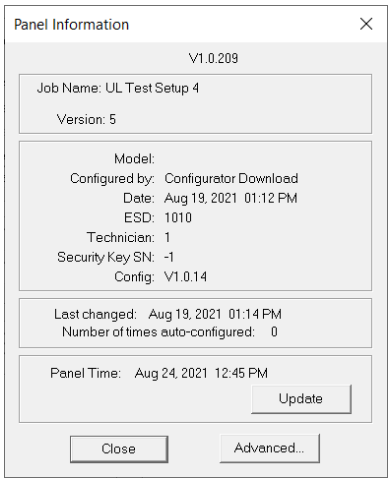


**Figure 77 Panel Information**

### 9.4.1 Advanced Panel Information

Click the **Advanced** button to see more information. This information may not appear for all annunciators.

The following information is displayed:

- Node - address
- Type - CPU Type
- Version - current firmware version (n/a for RA1000)
- Language - language in firmware (standard messages/menu etc.)
- System Type - one of the following:
  - Compact Build
  - Large Build
- HW Type - "base" or "Exp. Master" for the Large board
- HW Vers - currently always VX.X.X
- Status - one of the following:
  - Online
  - Not responding
  - Wrong type (configured as "xxxx" )
  - Unconfigured CPU
  - Firmware version mismatch
  - Address mismatch (configured as node xx)
  - Offline trouble: xxx xxx

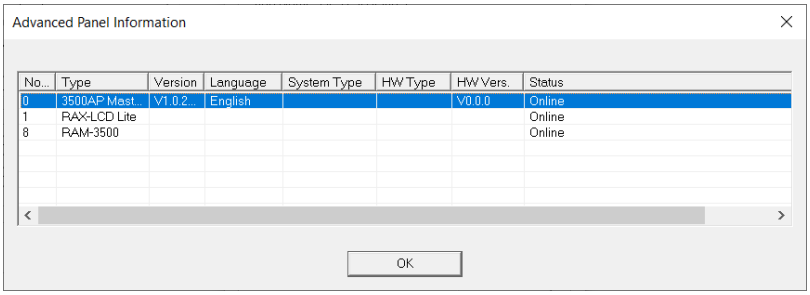


**Figure 78 Advanced Panel Information**

## 9.5 Event Log

The Event Log window has two tabs, one for the **General** log and one for the **Alarm** log. The operations of each tab are identical. When the window appears, the currently active tab reads information from the panel and displays it.

A status field at the bottom of the window shows the progress of displaying the events. Events are shown on a list with the columns: No., Date and Time and Event Description. Scroll the list up or down to see more events. New events are automatically added to the top of the list.

You can stop the process of displaying the events by clicking the **Stop** button. To re-load the list, click the **Refresh** button.

Click the **Export** button to export the list of the active tab to a CSV file. The CSV file can be imported to spreadsheet software such as Microsoft Excel for further analysis.

Click **Close** to close the window.

## 9.6 Upgrade Firmware through the Micro-B USB Port on the Core Board

**Attention: Follow the instructions in this section only if the panel's plug-in core board has a sticker showing "SO-289 v3.0.1" or "SO-479 v3.0.1" (or a number higher than 3.0.1).**

**If the panel's plug-in core board does NOT have a sticker showing "SO-289 v3.0.1" or "SO-479 v3.0.1" (or a number higher than 3.0.1), follow the instructions in section 9.7 on page 79.**

You need the following items in order to upgrade the firmware on the FX-400 and FX-401:

- Windows 10 computer with a USB port.
- USB A plug to micro-B plug cable.
- MGC-400 Series Configuration Utility (the Configurator).
- A copy of the firmware.

### Upgrade the firmware

1. Connect the USB cable to a USB port on the computer, and to the USB port on the FX-400/401 plug-in core board. This port is labeled **P5**.

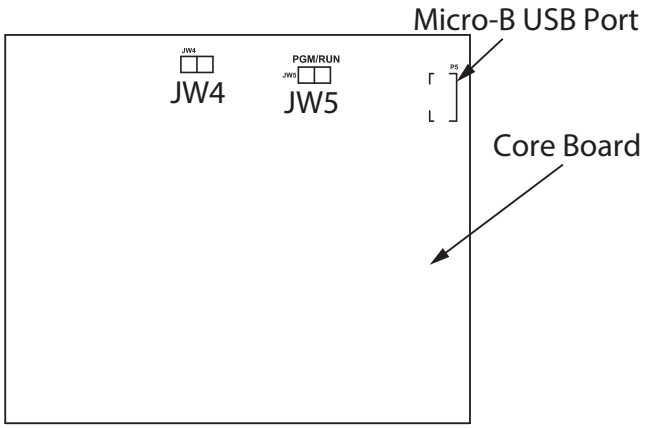


**Figure 79 Micro-B USB Port on the core board**

2. In the MGC-400 Configurator, click **File - User Preferences**.
3. In the **Serial Port** menu, select the COM port that the USB cable is using.


**Figure 80 Select the COM port in User Preferences**

4. Click **OK** to close the User Preferences window.
5. Click **Panel > Upgrade Firmware**.

   The Upgrade Firmware Wizard appears:

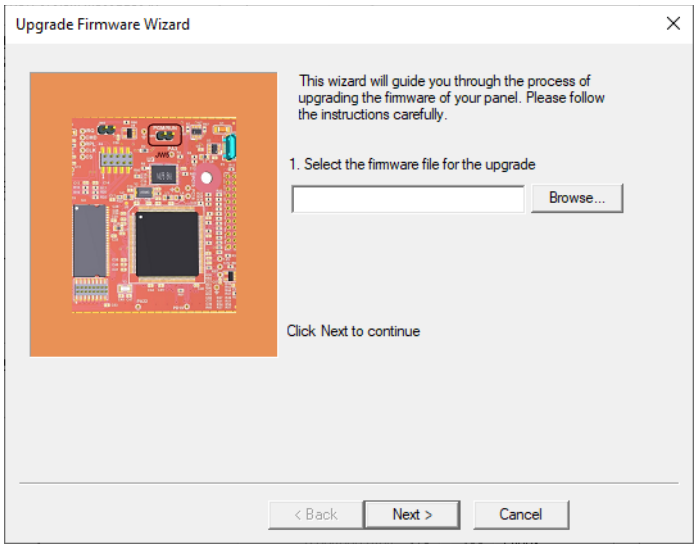


**Figure 81 Upgrade Firmware Wizard**

6. Click **Browse** and select the firmware file.
7. Click **Next**.
8. Follow the instructions in the next window:
   a. Disconnect AC power and batteries in order to fully remove power from the panel.
   b. Disconnect the micro-B USB cable from the plug-in core board.
   c. Remove the jumper from JW4 on the plug-in core board and place it on JW5.
   d. Reconnect the micro-B USB cable to the plug-in core board.

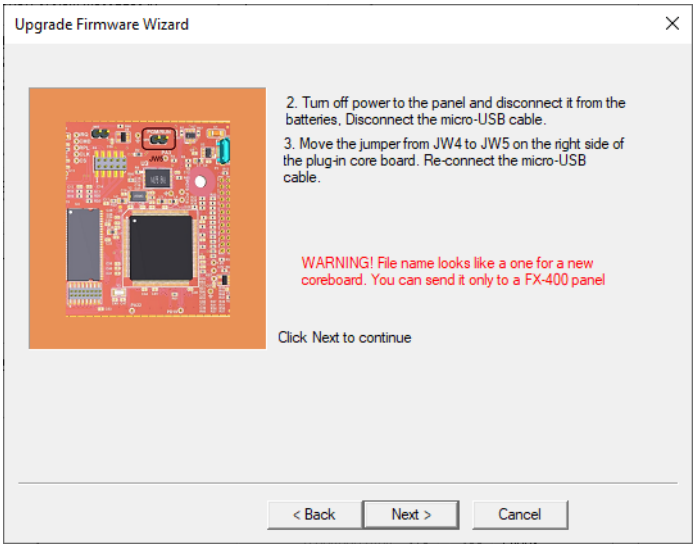


**Figure 82 Upgrade Firmware Wizard**

9. Click **Next**.

   A window appears showing the firmware upgrade status.

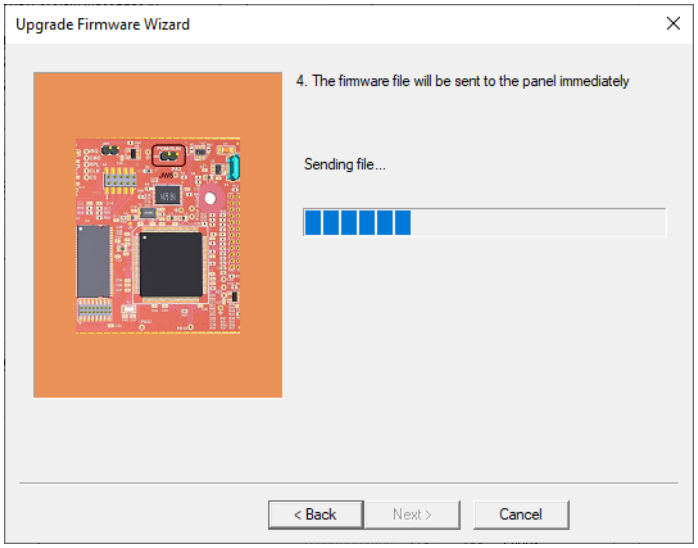


**Figure 83 Upgrade Firmware Wizard: Sending file**

10. After the file is sent successfully, click **Next**.

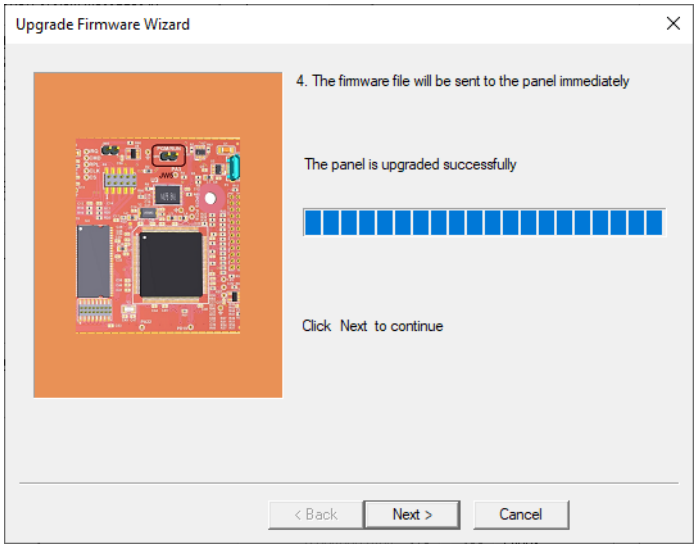


**Figure 84 Upgrade Firmware Wizard: The panel is upgraded successfully**

11. On the next window, click **Finish**.l

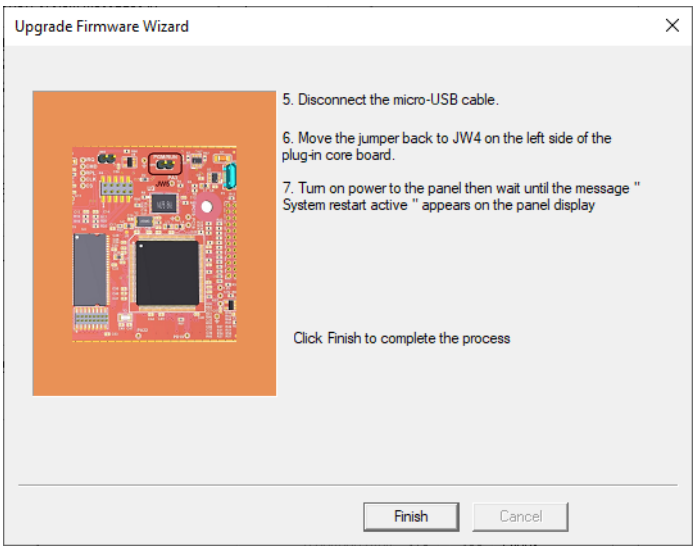


**Figure 85 Upgrade Firmware Wizard: Click Finish to complete the process**

12. Disconnect the micro-B USB cable.
13. Remove the jumper from JW5 and place it on JW4.

**Note:** During normal operation, the JW4 jumper is closed and the JW5 jumper is open.

14. Restore power to the panel.

## 9.7 Upgrade Firmware through the Main Board

**Attention: Follow the instructions in this section only if the panel's plug-in core board does NOT have a sticker showing "SO-289 v3.0.1" or "SO-479 v3.0.1" (or a number higher than 3.0.1).**

**If the panel's plug-in core board DOES have a sticker showing "SO-289 v3.0.1" or "SO-479 v3.0.1" (or a number higher than 3.0.1), follow the instructions in section 9.6 on page 75 above.**

You need the following items in order to upgrade the firmware on the FX-400 and FX-401 by connecting to the main board:

- Windows 7 or Windows 10 computer with a serial or USB port
- MGC-400 Series Configuration Utility (the Configurator).
- A copy of the firmware.
- MGC-CONFIG-KIT4 Fire Panel Configuration Kit (this kit includes the cables required to connect the computer to the Fire Alarm Control Panel)

1. Connect the laptop to the panel using one of the methods shown in section 1.4.1 on page 20.
2. In the MGC-400 Configurator, click **File - User Preferences**.
3. In the **Serial Port** menu, select the COM port that the cable is using.


**Figure 86 Select the COM port in User Preferences**

4. Click **OK** to close the User Preferences window.
5. Click **Panel > Upgrade Firmware**.
6. The Upgrade Firmware Wizard appears.

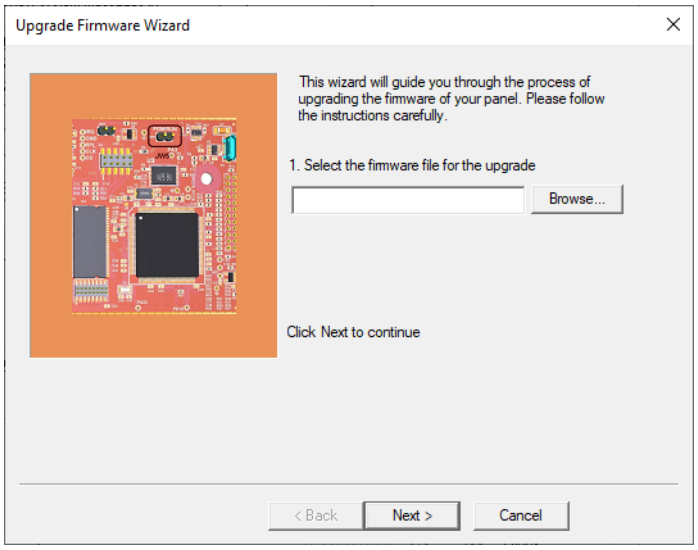


**Figure 87 Firmware Upgrade Wizard**

7. Click **Next**.
8. Follow the instructions on the screen to upgrade the firmware.

**Attention: The instructions in the Upgrade Firmware Wizard include moving the jumpers on the core board. The FX-400 and FX-401 core board is shown below.**

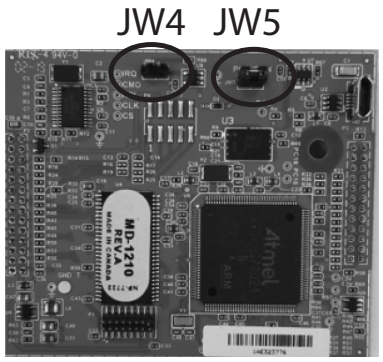


**Figure 88 Jumpers on the FX-400 and FX-401 core board**

# 10.0 Tools Menu

## 10.1 Extract All DB

This command extracts every job on the database and produces an individual database file for each. It has the same effect as running Export Job for every job. Unlike Export Job, you do not have the choice of making a compact serial archive (FX2Job).

## 10.2 Validate All

This command validates the latest version of every job on the database. It also produces a C file for each job and stores it in the Job Build folder.

It has the same effect as using Validate Job on each job. Before the process starts, it displays the Build Job dialog so that you can specify the version of the product to be built.

## 10.3 Build Job

This command validates and builds the current job, producing a C file in the Job Build folder.

It performs the build assuming the latest product version.

## 10.4 Build Job (old versions)

This command validates and builds the current job, producing a C file in the Job Build folder.

It first shows the Build dialog so that you can choose the product version. You can use this command to produce the C files for older versions of the panel.

## 10.5 Link Statistics

This command displays statistics for the connection between the Configurator and the fire alarm panel.

## 10.6 Log Send

Toggle the current state of the "dump on send" option. Causes the ".c" file to be produced and dumped on a Get Job.

## 10.7 Log Get

Toggle the current state of the "dump on get" option. Causes the ".c" file to be produced and dumped on a Send Get.

## 10.8 Log Comms

Toggles logging of serial communications.

## 10.9 Trace

Toggles the current state of the trace option. When turned on this causes debug information to be written to a trace file

## 10.10 Display Structure

This utility allows you to view the contents of a panel data structure. You have the option of continually retrieving and displaying the same structure at a refresh rate you specify. You can also log the results to a file.

**To display a structure**

1. Connect to the panel and click Display Structure under the Tools menu (you must have selected Show Tools Menu under preferences). The following dialog appears.
2. Choose the CPU.
3. Choose the Structure on that CPU. Loop structures are qualified with a loop number. e.g. gLCUPollData - Loop 2.
4. Choose the entry (for Poll Data there is one entry per device, other structures may be organized differently.
5. Choose how many entries to display. The maximum is adjusted automatically to compensate for the selected start entry.

**Note:** The actual entries on the panel may be less than the maximum. If you choose a start entry higher than the actual number of entries on the panel, an error message appears. If you choose a number of entries greater than those actually on the panel, only those that are present are displayed.

6. You can get a "one shot" display by pressing Refresh.
7. To run continuously, select a refresh rate and press Start.
8. To log to file check the Log To File box and specify a destination file.
9. You can adjust the refresh rate, the start entry and the number of entries while the display is running. They take effect after the next interval has expired.
10. To view a different structure you must first press stop.

## 10.11 External Bus

Toggles the "Use External Bus" setting. When turned on, this signals that the Configurator is connected to the External Bus of the panel.

## 10.12 About MGC-400 Series Configuration Utility

Displays the copyright notice and version number of your copy of the Configuration Utility.

## 10.13 Paste Special - Circuits, Adders or Entire Loops

This window appears in response to a Paste Special when pasting circuits, conventional adders or entire loops.

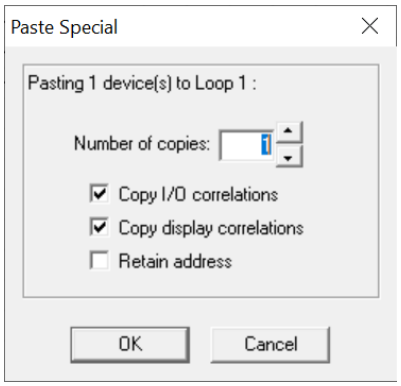


**Figure 89 Paste Special**

The text summarizes what is being pasted and its destination, for example pasting three devices to loop 2.

**Table 35 Paste Special - Circuits, Adders or Entire Loops**

| Name | Description |
|---|---|
| **Number of copies** | Enter the number of copies to make. The paste operation attempts to make the specified number of copies. If the capacity of the destination is exceeded a message appears saying how many copies were successfully made. |
| **Copy I/O correlations** | Check this box to include I/O correlations in the copy. |
| **Copy display correlations** | Check this box to include display correlations in the copy. |
| **Retain Address** | Check this box to retain the same addresses on the copied devices. A message appears if this is not possible. **Retain Address** can fail if the destination loop controller does not have sufficient free addresses. **Retain Address** always fails if the source and destination are the same loop. |

## 10.14 Paste Special - Display Items, Display Adders or Annunciators

This window appears in response to a Paste Special when pasting display items, display adders or entire annunciators.

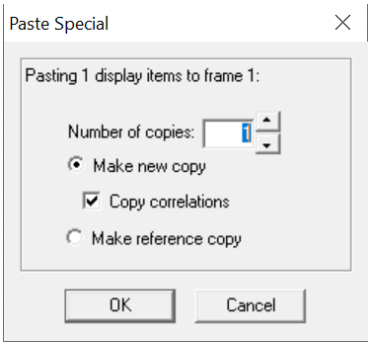


**Figure 90 Paste Special**

The text summarizes what is being pasted and its destination, for example pasting three display items to frame 0.

**Table 36 Paste Special - Display Items, Display Adders or Annunciators**

| Name | Description |
|---|---|
| **Number of copies** | Enter the number of copies to make. The paste operation attempts to make the specified number of copies. If the capacity of the destination is exceeded a message appears saying how many copies were successfully made. |
| **Make New Copy** | Choose this option to make an unrelated replica of the source. |
| **Copy Correlations** | Check this box to copy the correlations from the source to the new items. |
| **Make Reference Copy** | Choose this option to make a reference copy of the source. |

A regular copy is defined as follows.

The LEDs and switches are copied using newly assigned LED Grps.

Common Control Status LEDS are an exception - all similar types share the same Grp., for example a copied and pasted Signal Silence would retain the LED Grp of the source.

All attributes (tags, flags) are replicated.

If I/O Correlations is checked, then these too are assigned to the new copy. This is a "deep" copy.

If I/O Correlations is not checked, then of course they are not copied. This is the "shallow" copy.

A Reference copy is defined as follows.

New LEDs and switches are defined, but they retain the LED Grp of the source.

If any 3 POSITION SLIDE SWITCH is encountered while attempting a "Reference Copy" of individual items, a complete adder or an entire annunciator, an error message is displayed and a roll back of the operation occurs.

Both the new copy and the source (and any subsequent reference copies) are marked with an asterisk to warn you that the items are 'linked" or cross referenced. A change to one (for example addition of correlations) affects the others.

# 11.0 Correlations Pane

Programming a Fire Alarm Control Panel consists of correlating inputs to outputs. For example, you might correlate all the smoke detectors on the first floor to the speakers on the first and second floors, and smoke detectors on the second floor to the speakers on the first, second, and third floors, and so on.

Most of the primary lists (shown in the Details pane) are used in combination with correlations in the Correlations pane. The Correlation pane is a tabbed pane. Each tab shows a different category of circuit, display LED, and so on. See Figure 40.

## 11.1 Input Circuit Correlations

If the currently selected circuits are inputs then the correlation view has tabs for:

- Signals
- Relays
- Display Points (for example Input Zone and Bypass)

## 11.2 Output Circuit Correlations

If the currently selected circuits are outputs then the correlation view has tabs for:

- Alarm
- Supv
- Trouble
- Monitor
- Display Points (for example Output Zones and Bypass LEDs)

When you select **Add Correlations**, a window appears which displays the circuits and display items that can be correlated to the selected items in the top right pane.

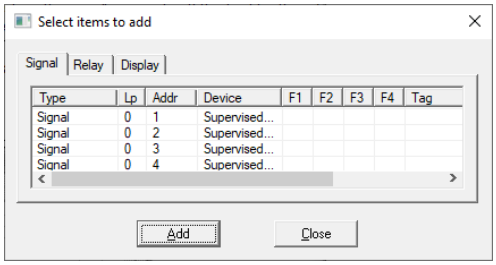


**Figure 91 Correlations window**

The Correlations window mirrors the Correlations pane. If a tab is selected on one, the same tab is automatically selected on the other.

If multiple items are selected in the Details pane, then the Correlations Pane only shows those correlations that are common to all of them. This means that no correlations might be shown. If a mix of input and outputs are selected in the Details pane, then no correlations are shown.

# 12.0 Differences Mode and Differences Report

## 12.1 Introduction

The Configurator can compare two jobs. The differences mode shows which elements have been added, removed or changed. The lists show in more detail which items have been modified or whether correlations have been added or removed.

In differences mode a report can be printed. The scope and depth of the print report can be chosen, similar to when printing a single job.

The differences report is intended primarily to provide the authorities with a detailed list of what has (and what has not) been changed. Such a report can used to justify only minor re-testing of an installation.

## 12.2 Primary and Secondary Job

The primary job is normally the older job, currently in service. It is the base against which the secondary job - the newer, modified job - is to be compared.

You normally first establish the primary job by opening it using the Job Menu and choosing the desired Job and Version. Then you invoke differences mode, where the secondary job is chosen.

This document occasionally refers to items that have been added or deleted. These terms are used with respect to the primary - assuming that the primary is the older job. There is nothing to prevent you from reversing this convention and establishing a newer job as the primary.

## 12.3 Initiating Differences Mode

Differences mode can be initiated either by selecting Compare Job Version from the Job Menu, or by clicking the Differences icon in the tool bar.

When you initiate Job Compare, the Job Compare Dialog is displayed.

Press OK to enter differences mode. This can take several minutes, as the program examines every component of each job and decides if it is added, removed or changed. Correlations are also compared during this phase. A changed correlation is reflected not only in the correlations list, but is propagated (as a modification) up to the device or circuit list and from there to the Device Loop in the job tree. A dialog is displayed to inform you of the progress of difference reporting and to allow the action to be canceled. If you cancel, the display reverts to the primary job, in normal mode.

### 12.3.1 Interpreting the results

When the comparisons have all been made, the jobs are presented as one job tree. See below.

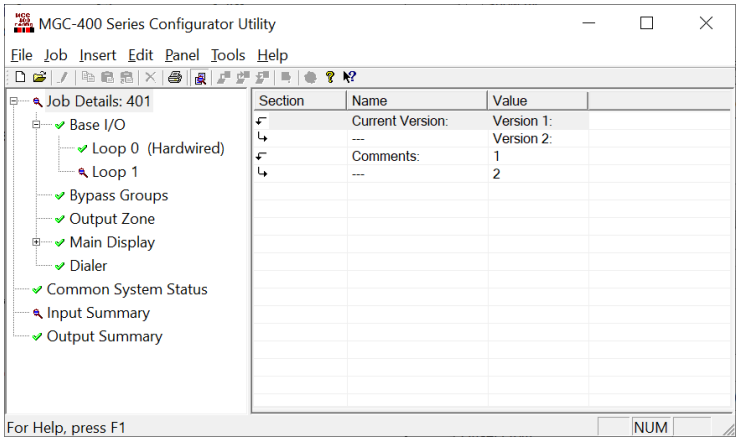


**Figure 92 Differences**

The magnifying glass icon represents an item that has been modified, symbolizing that it warrants a closer look: some lower level attributes have changed.

Items that have not changed have the green check mark icon, which means that there were no reportable changes on this item or any of its lower levels. If you chose a non-standard set of options and excluded, for example 'items that are modified', then a green check mark appears if there are modifications, but no deletions and additions. This is because you chose to ignore or exclude them. This icon is only used in the job tree. Items in lists are suppressed completely if you choose not to include items that are identical. If you include items that are identical, then they have no icon at all. This is to avoid clutter and aid readability of the lists.

Notice that the Main Display itself did not change. None of its attributes were changed. The fact that some changes were made to its Base Control/annun. does not cause the Main Display itself to be marked as changed.

An item that has been removed (is present on the primary job, but not present on the secondary) is depicted with this symbol.

And, conversely, items that have been added are identified with this symbol.

Where a minor modification to a form, a device, LED or switch has been made, two adjacent rows are presented. The attributes that remained the same are represented by ditto marks in the second row.

Where the only difference between two list items is in its correlations, the magnifying glass symbol is used. Again, this means that you can click on it to view the actual changes: in this case, the correlations in the bottom, right pane.

# 13.0 Printing

The print and print preview operations function just as in regular mode. In addition to choosing how much of the job to print, you can also decide whether to print Outputs with Input Correlations, Inputs with Output Correlations or Display Correlations.

If you chose to suppress identical items when you entered differences mode, then any node in the tree that is marked with a green check mark is not printed. Items whose only difference is in the lower level correlations are also not printed: only the actual correlations. On the printout the symbols - - > and < - - are used in place of the added and removed icons. The same symbols are used on pairs of lines to indicate which one is from the primary ( < -- ) and secondary ( - - > ).

If the print range of the job was Complete Job, then you may decide to choose only one of Input or Output Correlations, since every input has a corresponding output somewhere on the job. Be aware that if the print range does not encompass the complete job, then selecting only Input or Output may not include all correlations.

The Input and Output summaries list any changes to the UDACT numbers to be reported to the authorities.

TIP: Print Preview works best if you maximize the Preview window (other windows can't cover part of it, requiring a redraw when moved) and zoom in/out so that a complete out put page fits in the window (you don't have to scroll to view other parts of a page, which would cause frequent redrawing).

When you initiate either Print or Print preview, the following dialog is displayed

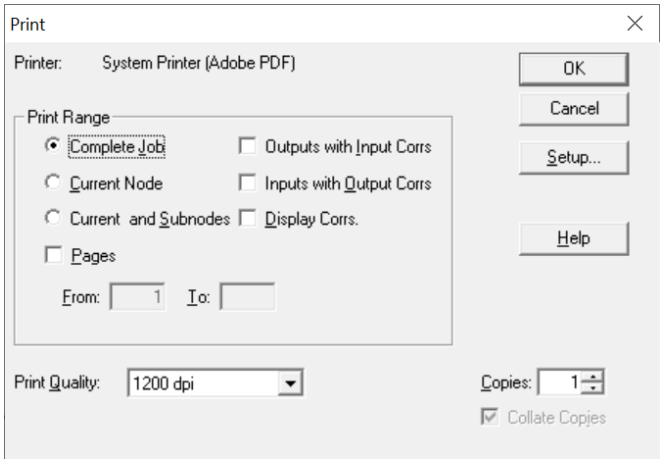


**Figure 93 Print**

**Table 37 Print**

| Name | Description |
|---|---|
| **Print Range** | You can specify the range or scope of the print job using these controls. |

**Table 37 Print (Continued)**

| Name | Description |
|---|---|
| **Complete Job** | Regardless of what item in the Job Tree you currently have selected, the complete job is printed. The print program prints all of the details of the Base Panel, followed by all of its loops, main display, etc. Then it goes to the next major node of the tree (e.g Loop Adder, CPU 1), printing its details and all of its contained loops. This process continues in a depth first manner, until the entire job has been traversed and printed. Each node of the tree is started on a new page. |
| **Current Node** | If you choose this option, the print job is restricted to details of the tree node or job component that you currently have selected in the Job Tree. No details of contained loops, etc. are printed. |
| **Current Node and Subnodes** | this option prints details of the currently selected tree node and all of its sub-items (and those items' sub-items, if any). |
| **Outputs with Input Corrs** | If this box is checked, then the Inputs correlated to Output circuits are printed in addition to the regular print. This is done for any relevant tree nodes / loops that are included in the scope of the print job. |
| **Inputs with Output Corrs** | If this check box is checked, then the Outputs correlated to Input circuits are printed. Status correlations are included with this option. This is done for any tree nodes / loops that are included in the scope of the print job. |
| **Display Corrs** | If this check box is checked, then the Display correlations are printed. This is done for any relevant tree nodes / loops that are included in the scope of the print job. |
| **General Note - Correlations** | If a tree node has no correlations, then it is skipped entirely by the print program. If a tree node has correlations, then a header is printed for every "correlated from" device. Beneath it, and tabbed, are all of the devices to it. If it has none, the major header is still printed. |
| **Setup** | This button launches the standard Windows printer setup dialog. You may choose a printer other than the default, or select a different paper size. The print program is designed to fit all information on Letter sized paper (8 ½ by 11) in portrait orientation. You may also choose Legal sized paper (8 ½ by 14). The print program takes advantage of the longer paper and fit more devices on one page for lists and correlations. If you choose smaller paper the font will be scaled down accordingly (within practical limits). |

**Table 37 Print (Continued)**

| Name | Description |
|---|---|
| **Pages** | this check box is only available when performing a print. It is disabled for print preview.<br><br>During preparation of a print preview or a print, the program makes one first pass through the tree nodes and loops that are in scope. It does this to calculate the page count. However, the program cannot insert the Max Page Number into the dialog because it is not known at that time.<br><br>If you need to repeat part of a print job (e.g. because the printer jammed part way through a job), then you must note the start page and the end page - up to the maximum number of calculated pages - and enter them in the From and To fields.<br><br>Generally, you can more easily control which portions of a job you wish to have printed by selecting a node in the tree and printing only that node. |

## 13.1 Print Setup

Launch the standard Windows Print Setup dialog to specify the printer, paper size and orientation.

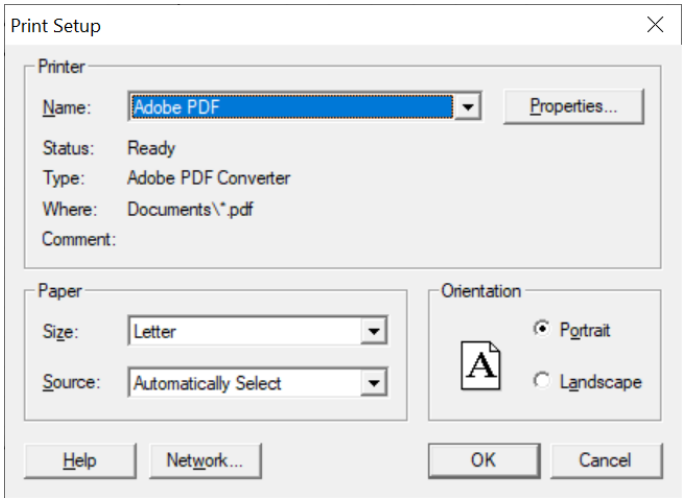


**Figure 94 Print Setup**

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