AUTOCALL

A004 and A008 Foundation Series Fire Alarm Control Units PC Programmer Installation Guide and Programming Instructions

1 Overview and installation

1.1 Overview

This section provides an overview of the process required to program a job and introduces you to the general features of the personal computer Programmer application, it is the Windows-based application used to program the fire alarm control unit (FACU).

You can program all functionalities, for example IDCs, NACs, Relays, Annunciator, DACT, date and time, of the A008-9101 panel using this programming tool.

You can only program DACT and date and time setting for the A004-9101 panel using this programming tool, other functions can be configured by DIP switches on the main board of the A004-9101 panel.

The following terms in the manual are defined as follows:

- **Job** refers to the file created by the personal computer programmer that contains all of the control unit's programming information. It is also sometimes called a CFIG file because the file extension for a job file is .CFG.
- **Master** (also called the control unit's EXEC file) refers to the binary file containing the control unit's operating system. It runs on the control unit's CPU, and it manages interactions between system components. Occasionally changes to the functionality of the operating system may require that a new Master file be downloaded.

The personal computer programmer application contains the following components, as shown in the following figure.

- **Tabs** corresponding to the major programmable components of the control unit. Clicking a tab gains access to a window where you can program a specific set of system attributes. For specific information see Tabs
- **Toolbar Icons** corresponding to routine tasks. To quickly perform routine tasks such as printing or saving a job, select the corresponding toolbar icon.
- **Menus** containing groups of similar choices. All menu choices have a counterpart on the icon bar.

Figure 1: Initial programmer screen
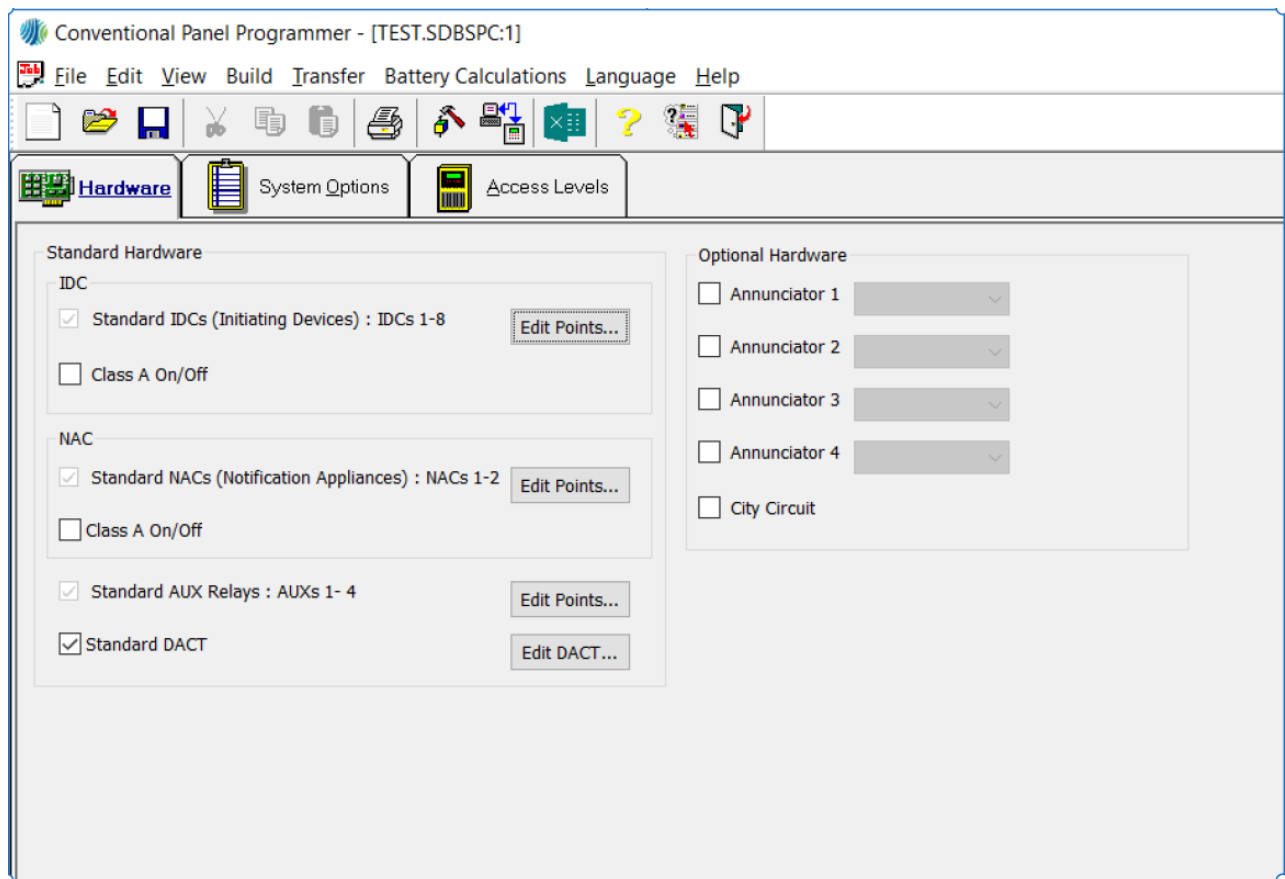
1.2 Tabs

Each tab contains a group of related programming functions.

1.2.1 Hardware Tab

Use the **Hardware Tab** to do the following:

- Define the attributes of each standard system point. Attributes include the point's function type, for example, whether a NAC is **On until Reset** or **On until Silence**.
- Edit a 20 character **Custom Label**. During editing, a customizable word library suggests common words to use.
- Define DACT attributes, if using the DACT.
- Define Alarm Group information for each point. Alarm groups allow selective signaling. By assigning IDCs and NACs to the same alarm group, you program the control unit to activate the NACs only if the IDCs in the same alarm group activate. You can also use Alarm Groups as reference points for annunciator LEDs, meaning the LED illuminates only if a point in the Alarm Group activates.
- Define the optional equipment installed on the control unit. For additional information see the following chapters.
- Define the operation of annunciator LEDs.

For additional information, see the following chapters:

- Programming IDCs, NACs, and AUX relays for information on programming IDCs, NACs, and relays.
- Annunciators for information on programming annunciators.
- Programming the DACT for information on programming the DACT.

1.2.2 System Options Tab

Use the **System Options Tab** to set pre-defined modes of operation that have a range of settings to choose from. Typically, they define global operations such as the time and date format as well as door drop timers. For information on programming system options, see Programming system options .

### 1.2.3 Access Level

Use the **Access Levels** to assign a numerical designation from one to three to each system operation. Operators can only accomplish tasks corresponding to the passcode they enter on the front panel. For information on programming access codes see Access levels.

1.3 Menu

The Programmer's menu structure is described in the following figure.

Figure 2: Menu structure
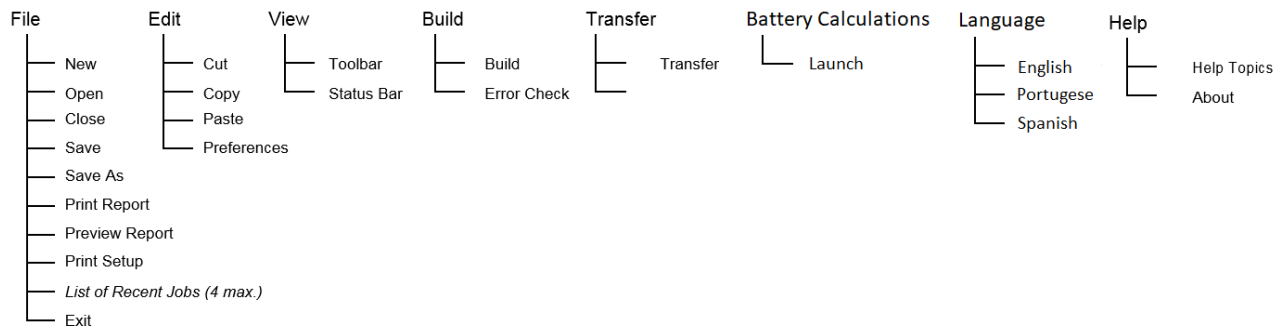
1.4   Icons

The icon bar, as shown in the following figure, contains a set of icons that you can use to quickly perform basic tasks, such as creating a new job or building a job. The figure also shows the location of the icon bar and identifies the function of each icon.
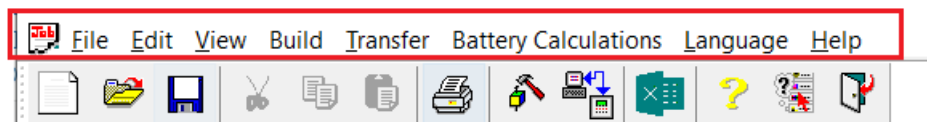
Figure 3: Icons

Table 1: Menu

Menu item	Options
File	New, Open, Save, Save As, Print Report, Preview Report, Recent Files and Exit functionalities.
Edit	Cut, Copy and Paste for text fields in the tool. User preferences can be set for tool bar icon size.
View	User preferences to either enable or disable tool bar and status bar.
Build	Error checking and building the configuration functionality.
Transfer	Upload and Download of CFIG, EXEC and logs etc.
Battery Calculations	Launch the language specific battery calculations sheet.
Language	Select the language options
Help	To read WebHelp files and information about tool.

Table 2: The purpose of each icon

Icon	Purpose
	New – Create new job file for 2004 or 2008 panel configuration.
	Open – Open existing job file for 2004 or 2008 panel configuration.
	Save – Save the current job file.
	Cut – Cut the clipboard from the text field of tool.
	Copy – Copy the clipboard to the text field of tool.
	Paste – Paste the clipboard to the text field of tool.
	Print Report – Generate and show the report.
	Build – Build the configuration of the job.
	Transfer – Upload and download the CFIG, EXEC and logs etc.
	Battery Calculation – Launch the language specific battery calculations sheet
	About – Opens about window of the tool.

Table 2: The purpose of each icon

Icon	Purpose
	Help – Opens the webhelp file of the tool.
	Exit – Exits the application.

1.5   Installing the programmer

To install the programmer, complete the following steps:

1. Use Windows Explorer to locate **SETUP.EXE**. Double click **SETUP.EXE** to launch the installation program. A screen appears, indicating that the programmer will be installed on your system.

2. Press **Next** to continue. A license agreement appears and it must be accepted to continue installation. The **Choose Destination Location** dialog box shown in Figure 4 appears to prompt you to specify the destination location for the files.

Figure 4: Destination location
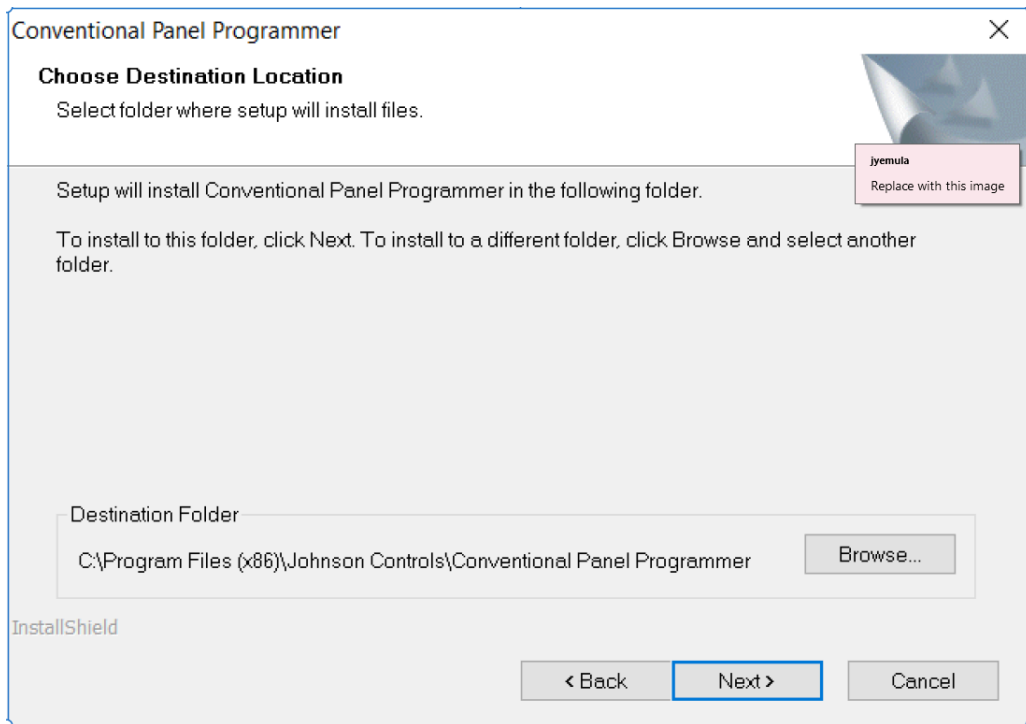
3. Use the **Browse** button to specify an alternate location if necessary, or use the default location shown in the Figure 4. Press **Next** to continue. The **Select Program Folder** dialog box shown in Figure 5 appears to prompt you to specify the name of the **Programs** folder.
    -   When you click the **Start** button and select **Programs**, this is the menu choice that accesses the Programmer.

Figure 5: Folder name
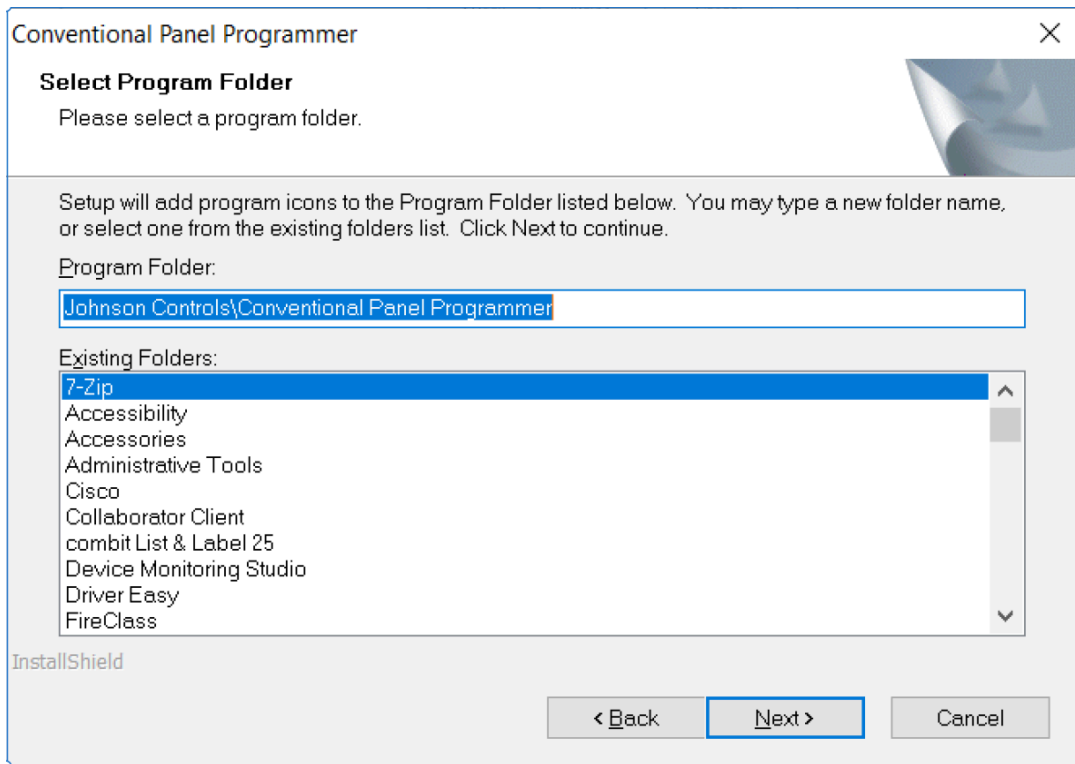
4. Enter the name of the folder and press **Next**. A prompt instructs you to click **Install** to start the install.

5. Click **Install** to install the files. A progress thermometer appears, followed by a screen that directs you to click **Finish** to complete the installation.

2 Basic operations

This section describes the basic operation of the FACU:

- Creating a new job
- Saving a job
- Opening an existing job
- Building a job
- Uploading or downloading a job
- Editing the custom label library

2.1 Creating a new job

To create a new job, complete the following steps:

1. To create a new job, complete either of the two actions:
   - Click the **File** menu and select **New**.
   - Click the **Paper** icon in the top left corner of the Programmer.

   The **New** dialog box appears to prompt you to choose the control unit type from 2008 and 2004.

Figure 6: Selecting the control unit type
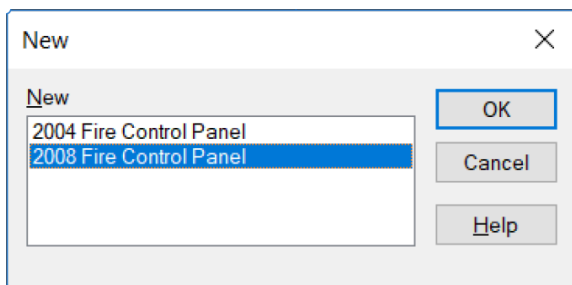
2. Choose **2008 Fire Control Panel** and click **OK**. The **New Job Dialog** dialog box shown in Figure 7 appears to prompt you to specify the **Job Name** and the directory path to where the job files are stored.

Figure 7: Specifying the job name and path
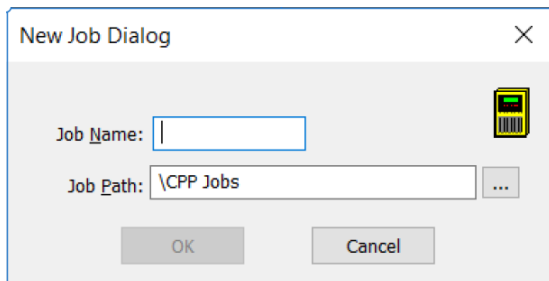
3. Enter an alpha numeric designation for the job, for example, `12345678K`, into the **Job Name** field.
   - If you need to change the directory that the files are stored in, click the ellipsis button to the right of the **Job Path** field and specify the new path.

2.2 Saving a job

You can save changes you make to a job in either of the following ways:

- Click the **File** menu and choose **Save**.
- Click the **Floppy Disk** icon on the toolbar.

You can also save an existing job as the basis for a new job using the **Save As** option.

2.3 Opening an existing job

Job files are stored in the directory *x*:\CPP JOBS*JOBDIR,* where *x* is the hard drive that the programmer was installed on and *JOBDIR* is the directory corresponding to the name of the job. To open an existing job, complete the following steps:

1. Click **File** and choose **Open**. A dialog appears, allowing you to sort through the PC's directories.

2. Locate the **\CPP JOBS** directory and the directory of the job you want to open.

2.4 Building a job

The build process involves converting the text version of the job to a binary file. The text version of the job is automatically stored on the personal computer when you save the job.

Note: You must build a file before attempting to download the file to the control unit.

To build a file and convert it to a binary image, complete the following step:

• Click the **Build** menu and select the **Build** option. A cautionary message appears to update the date and time from the Programming System options tab if not updated.

Figure 8: Caution before building a CFIG
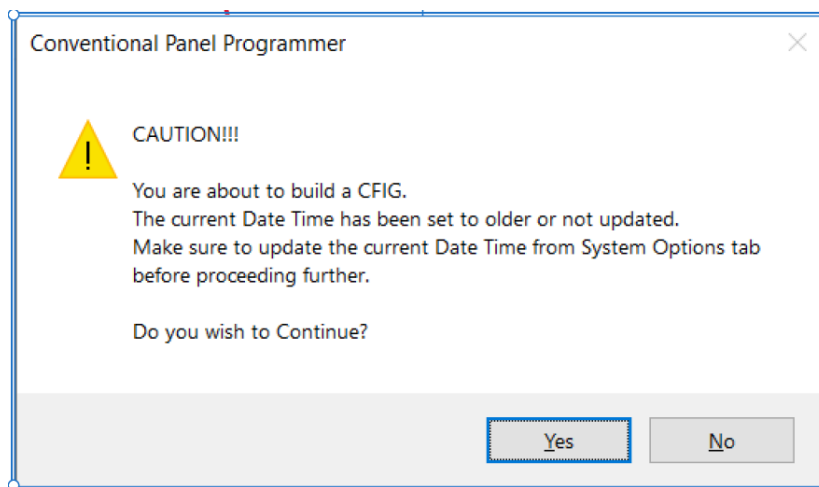
When the build has completed, the programmer displays a dialog indicating it is finished building the job.

2.5 Uploading or downloading a job

The term **Upload** refers to transferring files from a control unit to the personal computer (uploading). The term **Download** refers to transferring files from the personal computer to the control unit (downloading). To transfer a file, complete the following steps:

1. Connect the download cable between the USB port located on the right side of the panel board and a free USB port on the service personal computer.

2. In the personal computer Programmer, click the **Transfer** menu and select the **Transfer** option. The **Upload dialog** screen appears, as shown in the following figure.

Figure 9: Upload dialog screen
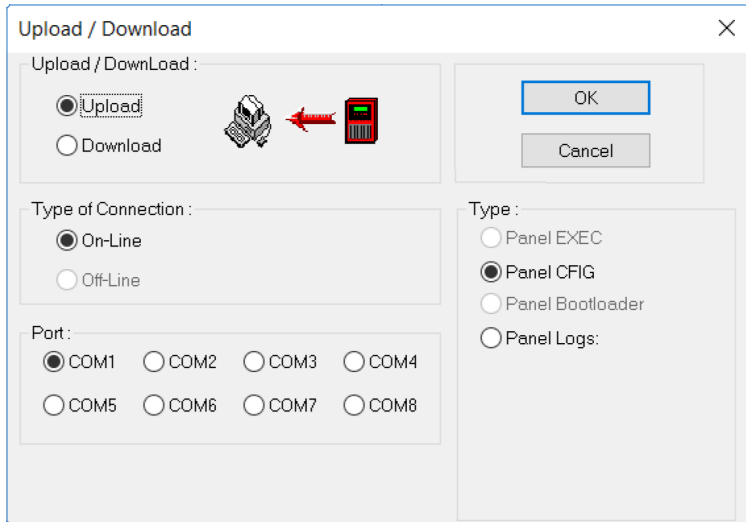
2.5.1 Uploading a job from Programming Tool

If you have an open job in the programmer, complete the following step before attempting to upload a job:

- Click the **File** menu and choose **Close**.

  Uploading a job transfers the job file from the control unit to the personal computer. The built (binary) job file is transferred from the control unit to the PC, unbuilt, and stored in a subdirectory of \CPP JOBS that corresponds to the name of the job.

  To set the upload options in the **Transfer Dialog**, complete the following steps:

  1. In the **Upload/Download** section of Figure 9, select **Upload**. The type of connection is always **On Line**, meaning the control unit continues to function as a FACU while the job file is uploading.

  2. In the **Port** section on the personal computer that the USB cable is attached, select the **USB COM port**.

  3. In the **Type** section, select either **Panel CFIG** (which is the job file) or **Panel Logs**.

  4. Click **OK**. The **Upload** dialog box prompt shown in Figure 10 appears.

Figure 10: Start upload dialog
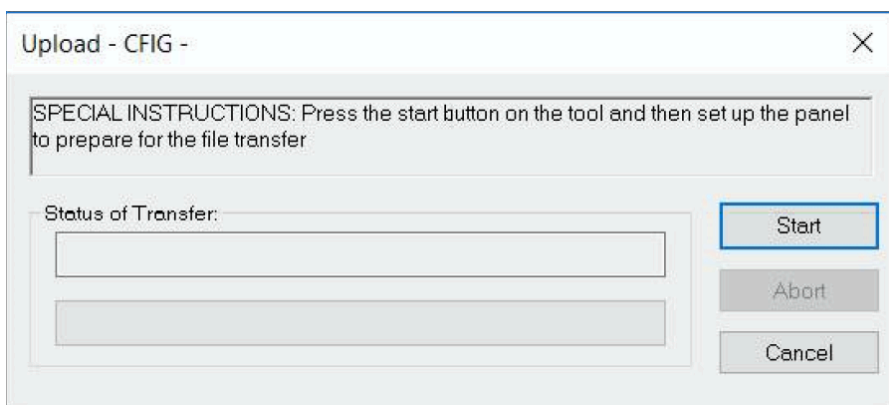
2.5.2 Uploading a job from Panel UI

To upload a file, complete the following steps:

1. Log in at access level 3.

2. Click **MENU**.

3. Press **NEXT** until the `Upld/Dwnld` prompt is shown.
   ```
   <ENTER>=Accept
   Menu:[Upld/Dwnld]
   ```

4. Press **ENTER**.
   ```
   <ENTER>=Accept
   XFER:[Start XFER]
   ```

5. Click **Start** to start the upload, see Figure 10.

6. Press **ENTER**.

2.5.3 Downloading a job from the Programming Tool

You can download two types of files to the control unit:

- **Panel CFIG File:** This is the built job file, consisting of all programming definitions in a binary format that the control unit's CPU can execute.
- **Panel Exec (Master):** The **Panel Exec** file is the **operating system** that runs on the control unit's CPU module. It manages interactions between system components. Occasionally changes to the functionality of the control unit may require that a new **Panel Exec** file be downloaded.

Note: **Panel Bootloader** performs initialization of key system components and provides firmware download capability.

To set the download options in the **Transfer Dialog**, complete the following steps:

1. From the **Upload/Download** section of Figure 9, select the **Download** radio button.

2. From the **Port** section on the personal computer that the USB cable is attached, select the **USB COM port**.

3. In the **Type of Connection** section, select between **Panel CFIG** if on line and **Panel EXEC** or **Panel Boot loader** if off line. **On Line** means the control unit continues to function as a FACU during the download. **Off Line** means that the control unit is not operating as a FACU during the download.

4. Click **OK**. A dialog box appears, prompting you to specify the location of the file to be downloaded.

5. Click the name of the file and click **Open**. The **Download** dialog box shown in Figure 11 appears.

Figure 11: Start download dialog
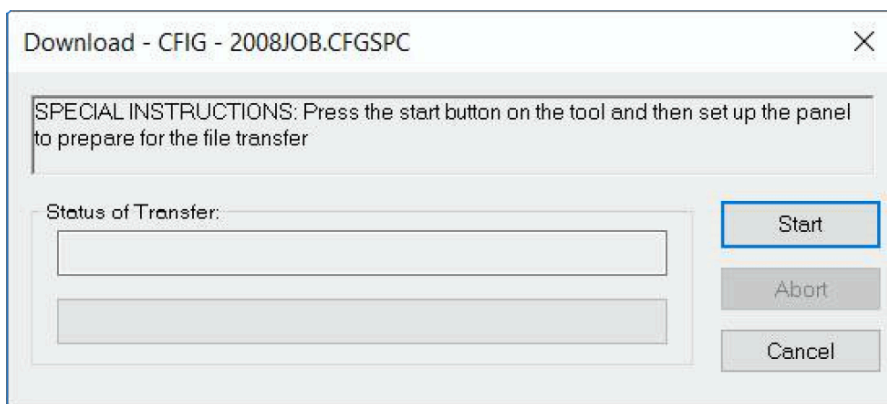
2.5.4　Downloading a job from Panel UI

To download a file, complete the following steps:

1. Log in at access level 3.

2. Click **MENU**.

3. Press **NEXT** until the `Upld/Dwnld` prompt is shown.
   ```
   <ENTER>=Accept
   Menu:[Upld/Dwnld]
   ```

4. Press **ENTER**.
   ```
   <ENTER>=Accept
   XFER:[Start XFER]
   ```

5. Click **Start** to start the download. See Figure 11

6. Press **ENTER**.

2.6　Editing the custom label library

Each point has a **Custom Label** field that allows you to assign a 20-character custom label to the point.

As you type letters into the **Custom Label** field, the programmer suggests possible words for the label. For example, typing `GAR` causes the control to suggest the word `GARAGE`. Use the **CTRL-F** key combination to accept the suggestion.

Suggested words are stored in an editable file named **word.lib.** To edit this file and add additional words to the file, complete the following steps:

1. Use Notepad to open the **word.lib.** file.

   Note: This file is installed in the directory indicated at installation time.

2. Add words to the file in alphabetical order, one word for each line. For a sample word screen see Figure 12.

Figure 12: Editing word.lib.
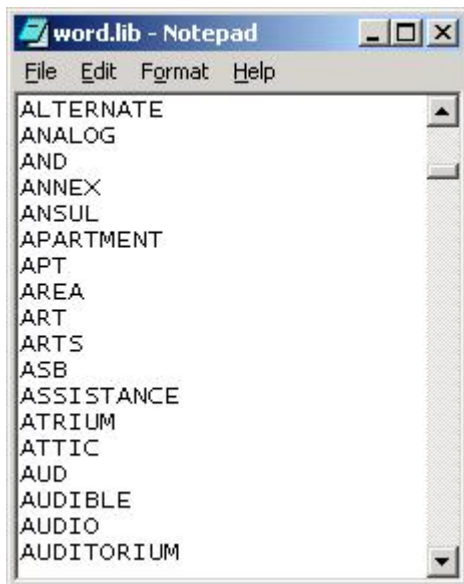
2.7 Change COM port from Device Manager

As shown in the following figure, when a USB cable is connected from the personal computer to the panel, in **Device Manager** under the **Ports** section, check the COM port number assigned by the personal computer.

Figure 13: Device Manager
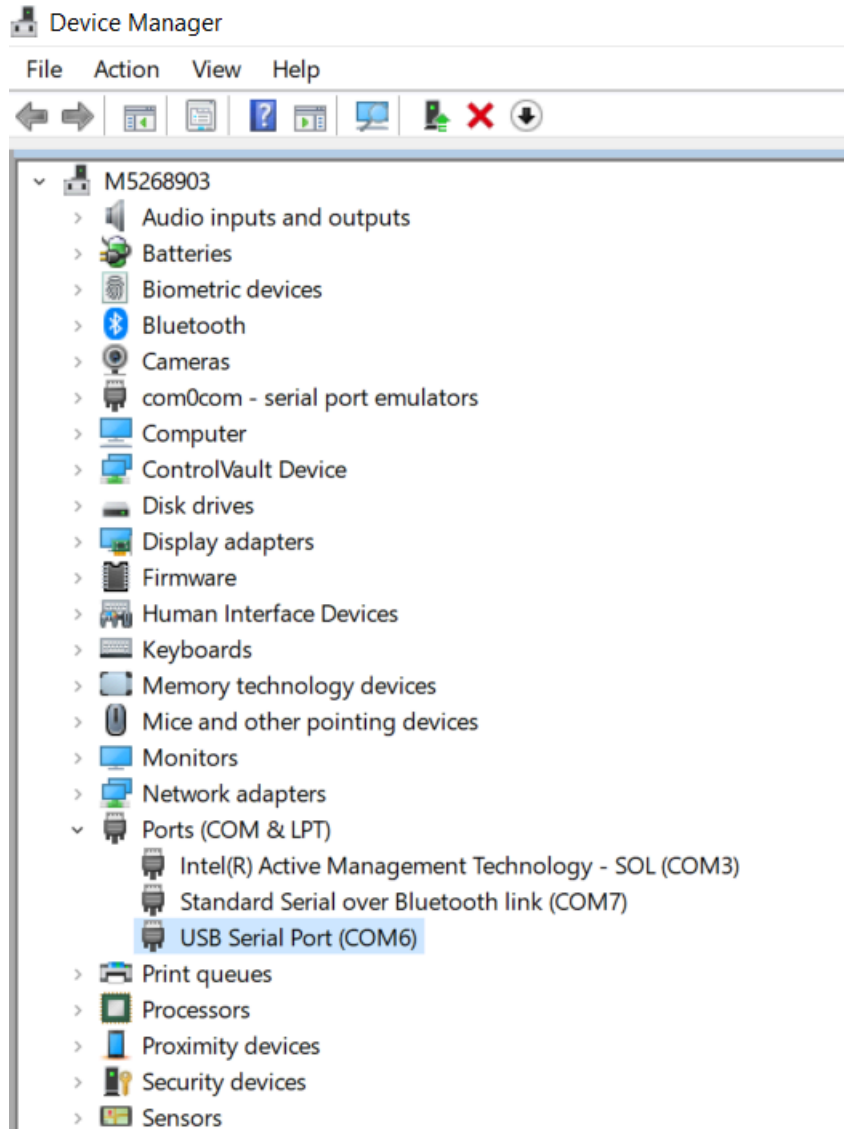
In some cases, the personal computer might assign a COM port number greater than 8, but the Conventional Panel Programmer only accepts COM ports from 1 to 8 while Uploading/Downloading a job file.

To change the COM port number, follow these steps:

1. In Windows, open **Device Manager** and identify the **COM** port which is assigned greater than 8 as shown in the following figure.

Figure 14: Device Manager COM12
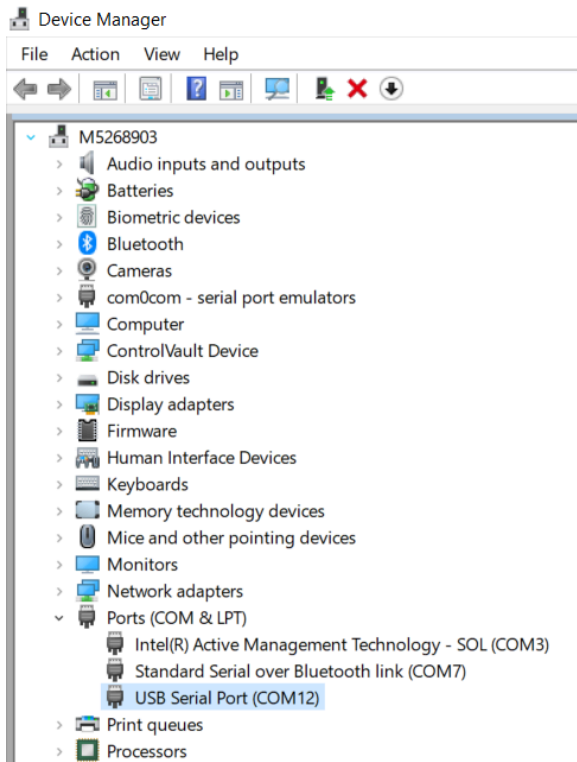
2. Right click on **Port** and click on **Properties**. Click on the **Port Settings** tab and press the **Advanced** button. The following window appears.

Figure 15: Advanced Settings for COM12

3. Use the **COM Port Number** drop down to select a number that is not already in use. Press **OK**.

4. Make sure after refreshing the **Device Manager** page, that the changed **COM** port number is reflected.

2.8 Troubleshoot USB not recognized issue upon Hot Plug

Hot Plug is the ability to remove or terminate the USB device from a computer system while the machine is running. This is controlled by Windows OS to maintain the system security and battery saving settings.

When 2004 and 2008 panels are connected to the Conventional Panel Programmer for longer duration without any communication, the USB might go into Hot Plug state often and on trying to communicate, it might lead to **USB device not recognized** error as show in the following figure.

Usually this issue is seen if the device gets into hot plug multiple times consecutively.

Figure 16: USB device not recognized
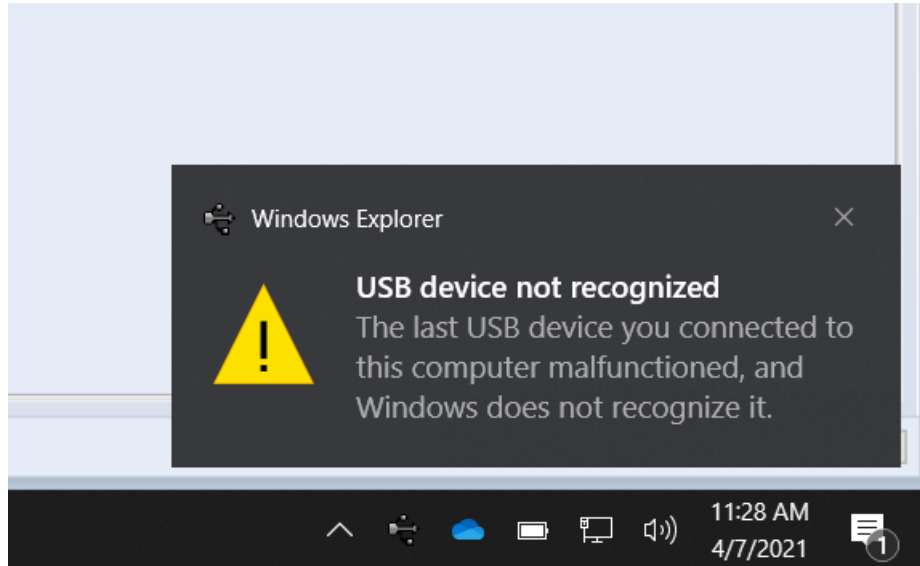
Figure 17: Device Manager
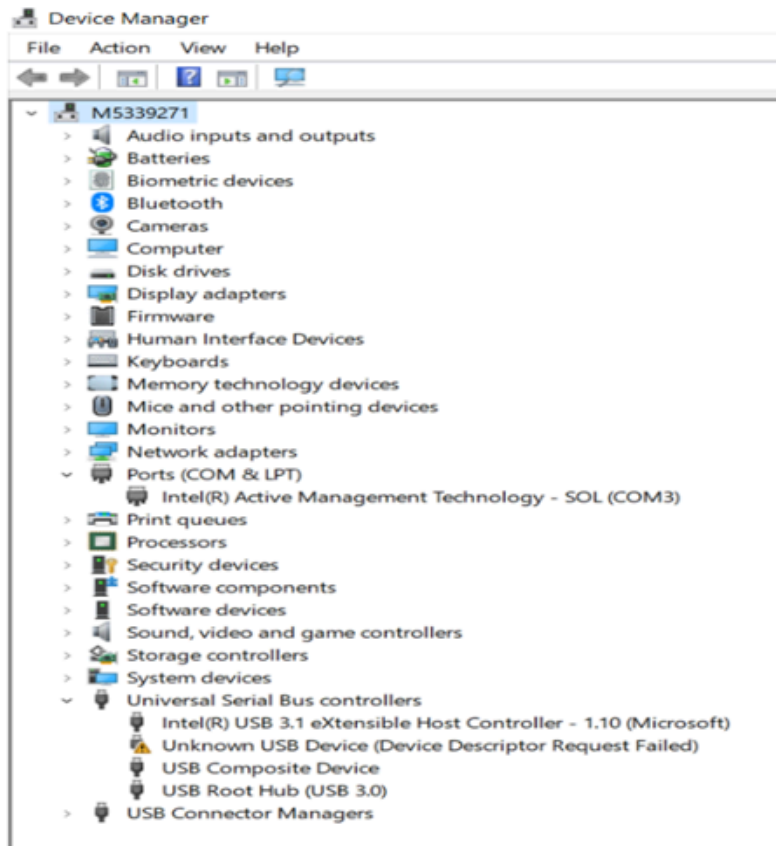
2.8.1 Troubleshoot 1

1. Go to **Control Panel** and click **Power Options**

Figure 18: Control Panel Power Options
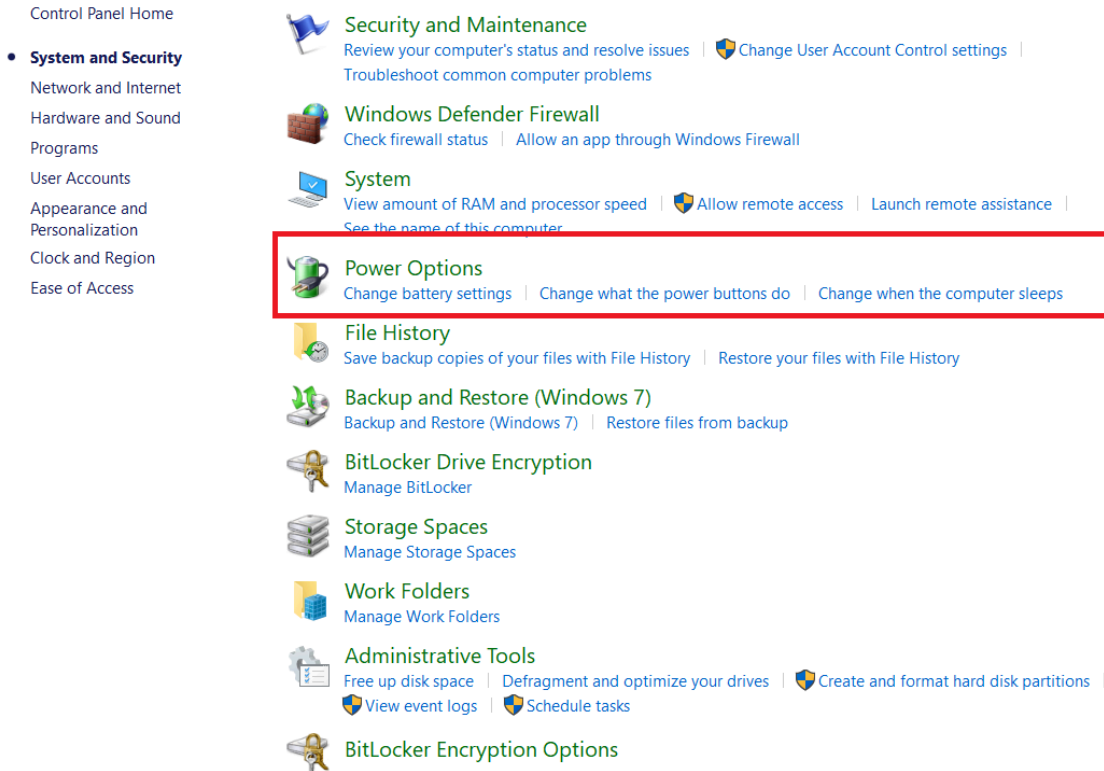
2. Click **Change Plan Settings** and click on **Advanced power settings**.

Figure 19: Customize a power plan
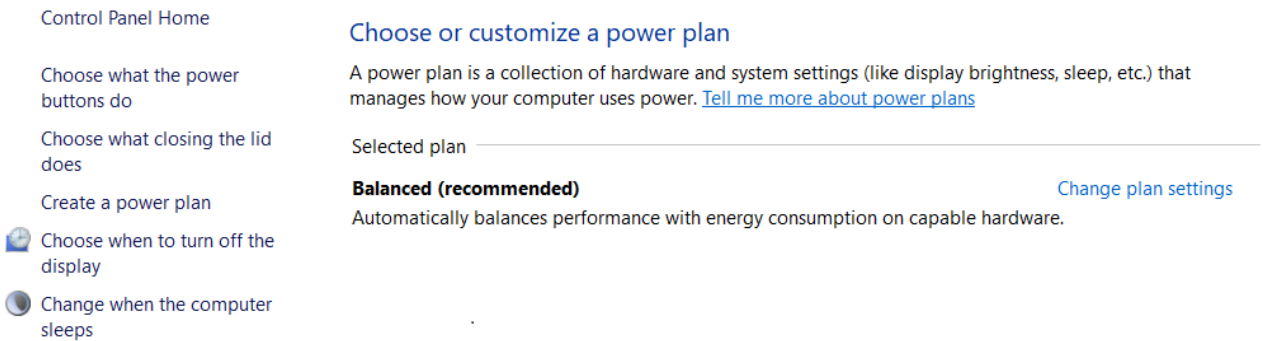
Figure 20: Change settings for the plan

3. Expand **USB settings** and **USB selective suspend settings**.

Figure 21: Power Options Advanced Settings USB Enable Disable
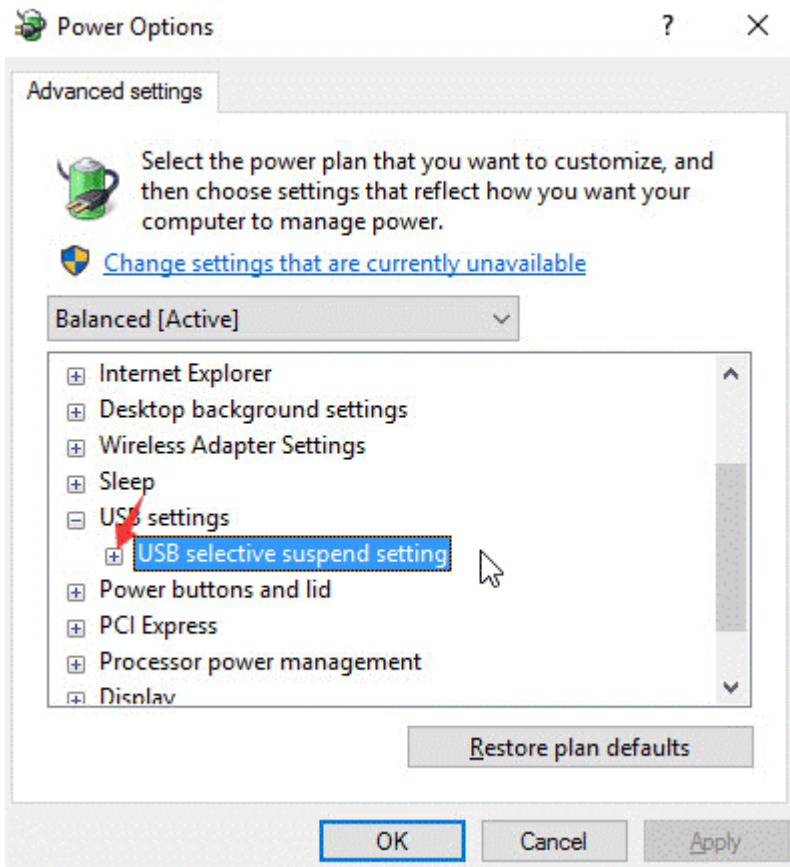
4. Disable both **On battery** and **Plugged in** settings.

Figure 22: Power Options Advanced Settings USB Enable Disable
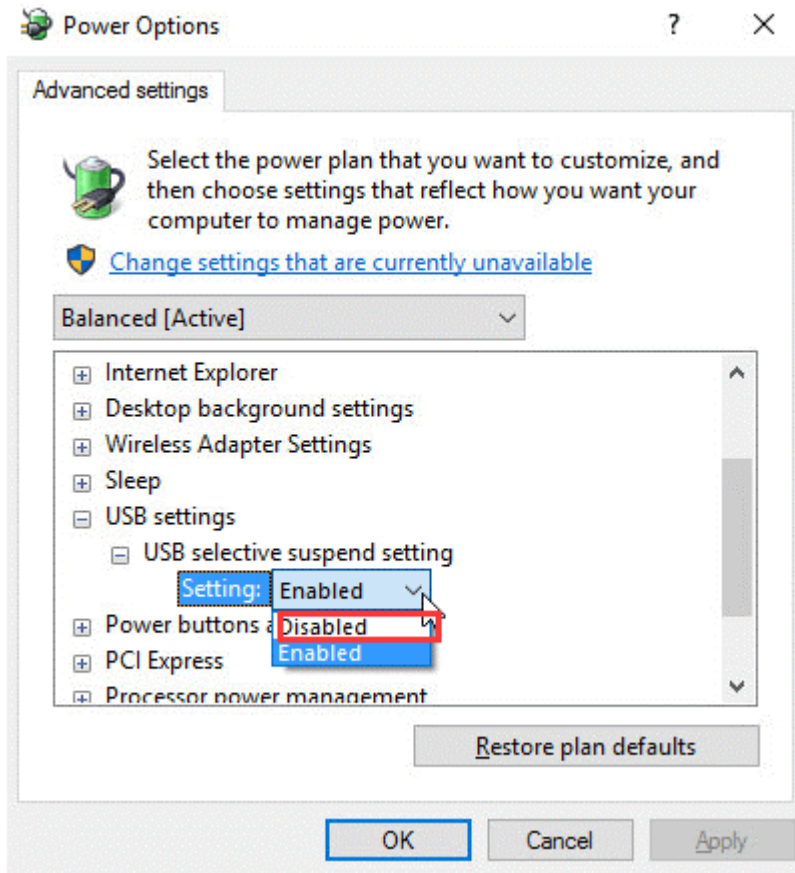
5. Click **Apply** and then **OK**.

2.8.2 Troubleshoot 2

If troubleshoot – 1 doesn't solve the **USB not recognized issue**, try this.

1. After connecting the USB device, in **Device Manager** settings, click on **Disable device**.

Figure 23: Disable USB Serial Converter
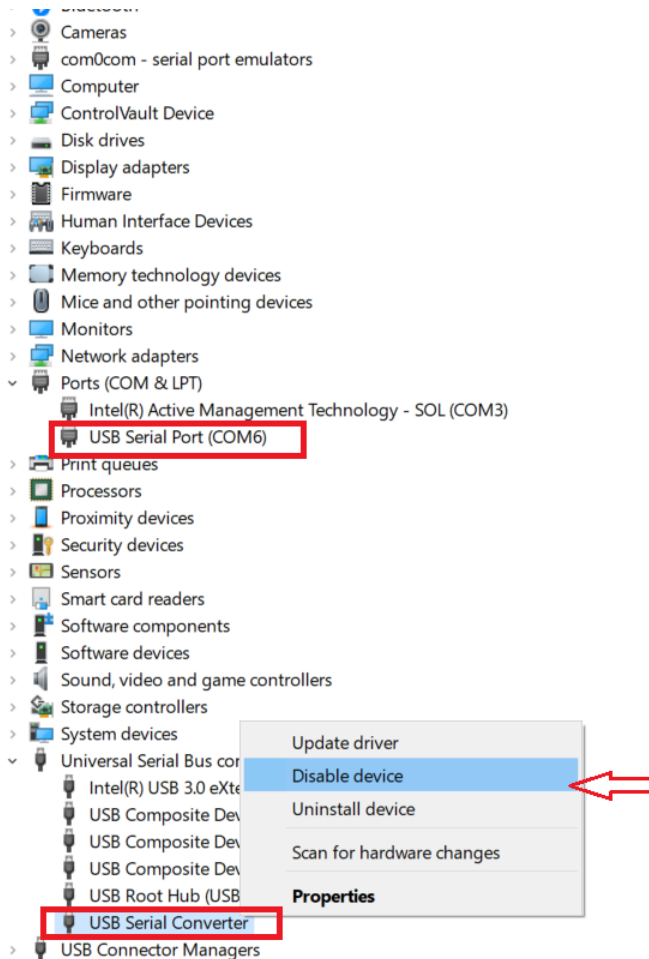
This makes the USB device enter sleep mode, so the next time, when the device is connected, the device gets recognized and connected.

2. After the device is connected, in **Device Manager**, click on **Enable device**.

Figure 24: Unable USB Serial Converter
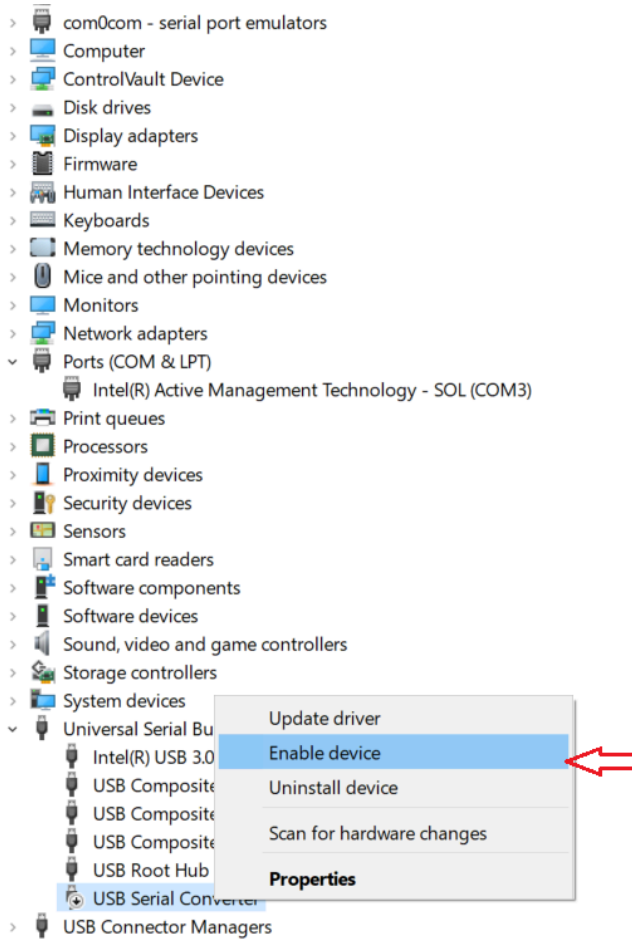
3   Access levels

Use the access levels to restrict operator access to specific groups of functions. Setting access levels is a two-step process as follows:

1. Associate each operator function with an access level, that is a numerical designation from one to three, with one being the lowest access level and three being the highest.

    Assign basic functions, such as **System Reset** and **Change Time and Date** to Access Level 1. Assign more sensitive functions, such as **Edit Entire Job**, to Access Level 3.

2. Associate each access level with a four-digit passcode on the front panel.

When an operator logs on with their passcode on the front panel, they are only allowed to execute the functions associated with their passcode.

It is important to look at the list of functions and access levels, consider what groups of users will be using the control unit, and then try to match those user groups to specific functions. Typical groups requiring some level of interaction with the control unit include:

- Security guards
- Maintenance personnel
- Technicians who maintain and program the system
- Firefighters
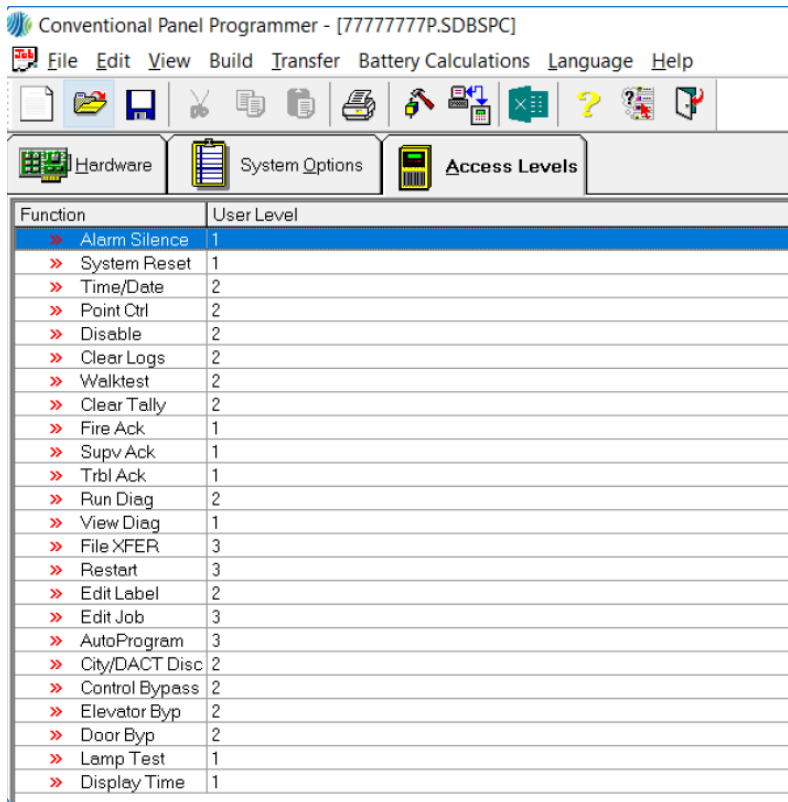
You might also want to consult the local authority having jurisdiction (AHJ) before programming access levels. The AHJ may require that only specific groups of people have access to functions such as system reset and alarm silence.

3.1   Setting access levels

To set the access levels, complete the following steps:

1.   Click the **Access Levels** tab. A screen similar to Figure 25 appears. Figure 25 lists all of the control unit functions and shows the default access level assigned to each function.

Figure 25: Control unit functions and default access levels

2.   From the **Function** column, click one of the functions. The **Object Properties** dialog box shown in Figure 26 appears, it prompts you to assign a numerical access level to the function.

Figure 26: Setting user level
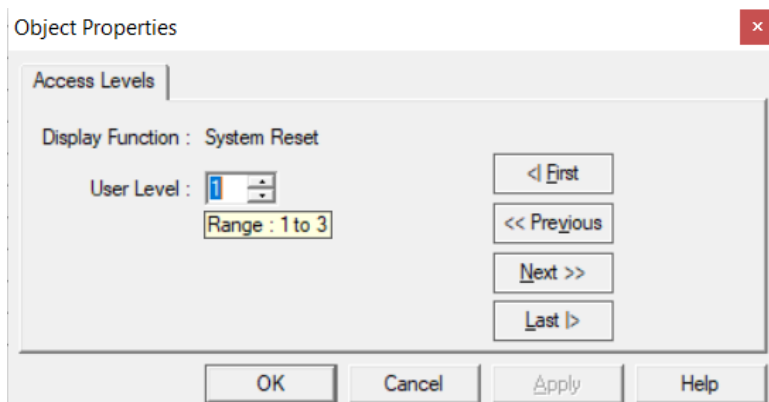
3.   In the **Object Properties** dialog box, click the **User Level** control. Increment or decrement the value until it is appropriate for the selected function.

4 Programming system options

This chapter describes using the **System Options** tab to set the control unit's system options.

System options are pre-defined modes of operation with a range of settings to choose from. Typically, they define global operations such as the time and date format and the door drop timers.

4.1 System options

The following table provides a summary of the system options.

Table 3: System options

Option	Setting
Job description	Use the **Job description** option to insert descriptive text into the **Text** field.
Time and date format	Use the **Time and date format** option to select 12 (am/pm) or 24-hour (military) format.
Display 1st alarm **Note:** This setting is applicable only to the panel, it does not apply to the annunciator display.	When you select the **Display 1st alarm** option, the control unit automatically displays the first or oldest alarm instead of the **Alarm Tally** abnormal screen. The first responder can use the **Display 1st alarm** to determine the location of the first alarm in the system without having to open the door and press the **Acknowledge** key. If an unacknowledged alarm exists, the system displays that alarm. When you acknowledge that alarm, the system displays the oldest alarm. If no fire alarms exist in the system, the control unit displays the first supervisory event. If no supervisories exist, the control unit displays the first trouble. If there are no fire alarms, supervisories, or troubles, the control unit displays **SYSTEM NORMAL**.
Depleted battery cutout	Select the **Depleted battery cutout** option to configure the operation of the control unit if an alarm occurs during an AC power loss while a depleted battery trouble exists. If you select the **Depleted battery cutout** option, the system does the following: • It will not initiate an alarm if the first alarm occurs after the system detects the depleted battery state. If the hardware jumper, resistor R82, for depleted battery cutout has been clipped, the system will shut down 60 seconds after detecting the depleted battery condition. • It will continue to sound the alarm if the depleted battery state is reached after the system is already in the alarm state.
Alarm cutout time	Select the **Alarm Signal Cutout** timer to set a duration for how long notification appliances sound after an alarm. When an alarm condition exists, the signals sound until silenced. With this option set at two minutes, building signals sound on alarm for two minutes and then stop sounding. However, the alarm condition remains active. Choose a timer range from 0 to 60 minutes (default = 0 - no cutout)
Inhibit	While the timer is counting down, the **Alarm Silence** or **Reset Inhibit Timer** prevents a system operator from using either the **Alarm Silence** or **System Reset** functions. When the inhibit timer expires, you can reset or silence the control unit. Choose a timer range from 0 to 60 minutes (default = 0 - no inhibit).
AC doors	Select the **Door Holder Drop** option on the **AC Failure** to hold the doors open for a set duration during an AC power loss condition. After the timer expires, the control unit turns off the door holder relays (all DHOLDER point types). The range for the timer is 0 to 60 minutes with a default setting of 5 minutes. To have the door holders drop the doors immediately upon AC power loss, set the timer to 0. This option applies to all DHOLDER relay function types regardless of their Alarm Group setting.
Alarm doors	Select the **Alarm doors** option to hold doors open for a set duration during an alarm condition. After the duration expires, the control unit shuts off the door holder relays (all DHOLDER point types). Choose a timer range from 0 to 60 minutes (default is 0 - immediate door drop). This option applies to all DHOLDER relay function types regardless of their Alarm Group setting.
Cross zoning	Select the **Cross zoning** option to enable cross zoning for each alarm group. For example, if you enable cross zoning for Alarm Group 1, it takes two activated alarms in Alarm Group 1 before outputs associated with that alarm group will activate.
NFPA NAC operation	When you select the **NFPA NAC operation** option, the horns and the strobes on the QALERT NACs turn **Off** when alarm silence is activated. If you do not select the **NFPA NAC operation** option, the strobes turn off upon completion of system reset.
Reminder	Select the **Active Status Reminder** option to set an interval and duration during which the control unit reminds operators that a FIRE, SUPV, or TBL condition still exists. The control unit reminds operators that a FIRE, SUPV, or TBL condition still exists by sounding the front panel tone-alert. • Choose: ON or OFF (default = OFF). • Set reminder interval (1 to 12 hours). • Signal duration: Use this option to set the duration of the acknowledge signal. (0 to 60 seconds; 0=on until ack). The default for this option is 0, which means that to silence the reminder you need to acknowledge the existing condition.

Table 3: System options

Option	Setting
Report AC failure delay	Use the **Report AC failure delay** option to select the time delay that the system uses before reporting an **AC Failure** condition to the central station through the DACT, or before the city trouble is tripped if the only trouble is **AC Failure**.
Test report time	Use the **Test report time** to select the time when the daily **System Test Report** is sent to the central station. The default is 2 AM. Choose a timer range from 2-24 hrs. (default is 2 hrs.)
Date and Time	Use the **Date** option to set the date on the control unit. The default date is set to the current date and is non-editable. To edit the date, deselect the **Use Current Date Time** button. Use the **Time** option to set the time on the control unit. The default time is set to the current time and is non-editable. To edit the time, deselect the **Use Current Date Time** button. If you want to set the current date and time, check on **Use Current Date Time**. **Note:** Reset the Date and Time setting after every panel restart and at the time of maintenance.
Language	The **Language** option to set the language on control unit. The following are the options available: · English · Portuguese · Spanish The default is English.

4.2   Daylight Saving Time

The Daylight saving timetable is provided in the tool to update the system's country standard for the automatic switch to work properly on the panel.

By default, the tool uses the daylight saving table for North America.

The **System options** tab is used to edit the configuration for the Daylight Saving Time for 10 years at the most.

Use the **Daylight Saving Times** as shown in Figure 27, to perform the following actions:

· Enable / Disable the data in **Daylight Saving Time table** to let the panel know whether to use the data or not.
· Reset the daylight saving time to default values.

Edit the **Solar** or **Daylight** time to configure the change onto the panel.

Figure 27: Daylight Saving Time

Daylight Savings Times

☑ Enabled   Reset

Daylight Savings Time table

Year	Solar Time Day	Solar Time Hour	Daylight Saving Day	Daylight Saving Hour
2021	20-05-2021	02:00:00	07-11-2021	02:00:00
2022	13-03-2022	02:00:00	06-11-2022	02:00:00
2023	12-03-2023	02:00:00	05-11-2023	02:00:00
2024	10-03-2024	02:00:00	03-11-2024	02:00:00
2025	09-03-2025	02:00:00	02-11-2025	02:00:00
2026	08-03-2026	02:00:00	01-11-2026	02:00:00
2027	14-03-2027	02:00:00	07-11-2027	02:00:00
2028	12-03-2028	02:00:00	05-11-2028	02:00:00
2029	11-03-2029	02:00:00	04-11-2029	02:00:00
2030	10-03-2030	02:00:00	03-11-2030	02:00:00
2031	09-03-2031	02:00:00	02-11-2031	02:00:00

5   Programming IDCs, NACs, and AUX relays

This chapter describes using the **Hardware** tab to set the characteristics of each initiating device, notification appliance, and AUX relay to the specific values required for the job.

5.1   Hardware tab

Use the **Hardware** tab, shown in Figure 28, to perform the following actions:

- Identify which optional modules are installed on the control unit.
- Select a category of points to edit. For example, clicking the **Edit Points** button to the right of the **Standard IDCs (Initiating Devices): IDCs 1-8** check box invokes the **Properties** sheet that you can use to specify the characteristics of each IDC.

Figure 28: Hardware tab
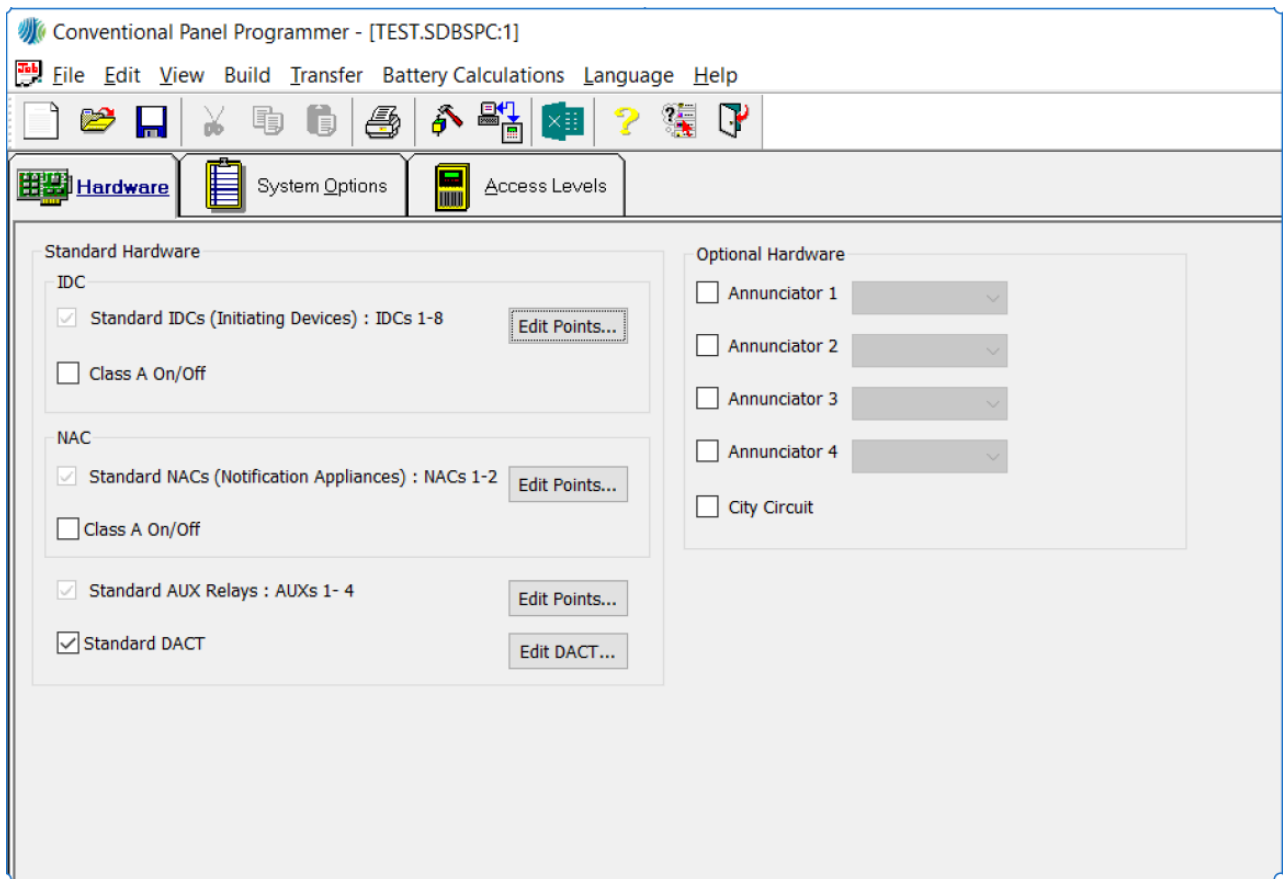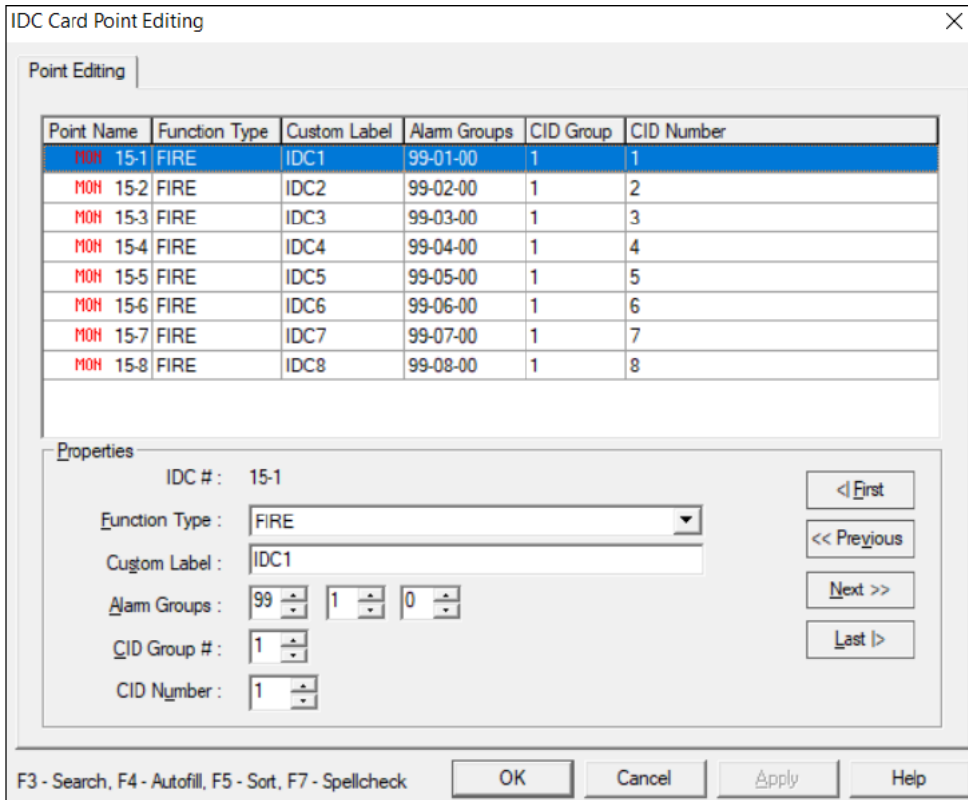
5.2   Programming IDCs

Use the following procedure to edit the programming of the IDCs on the panel.

1. For **Hardware** tab settings see Figure 28.

2. To program up to eight numbers of IDCs in Class-B wiring style, click the **Edit Points** button to the right of **Standard IDCs (Initiating Devices)**. See Figure 29.

Figure 29: Class-B IDCs properties screen

3. To program up to four numbers of IDCs in Class-A wiring style, first click **Class A On / Off** button, then click the **Edit Points** button to the right of **Standard IDCs (Initiating Devices)**. See Figure 30.

Figure 30: Class-A IDCs properties screen
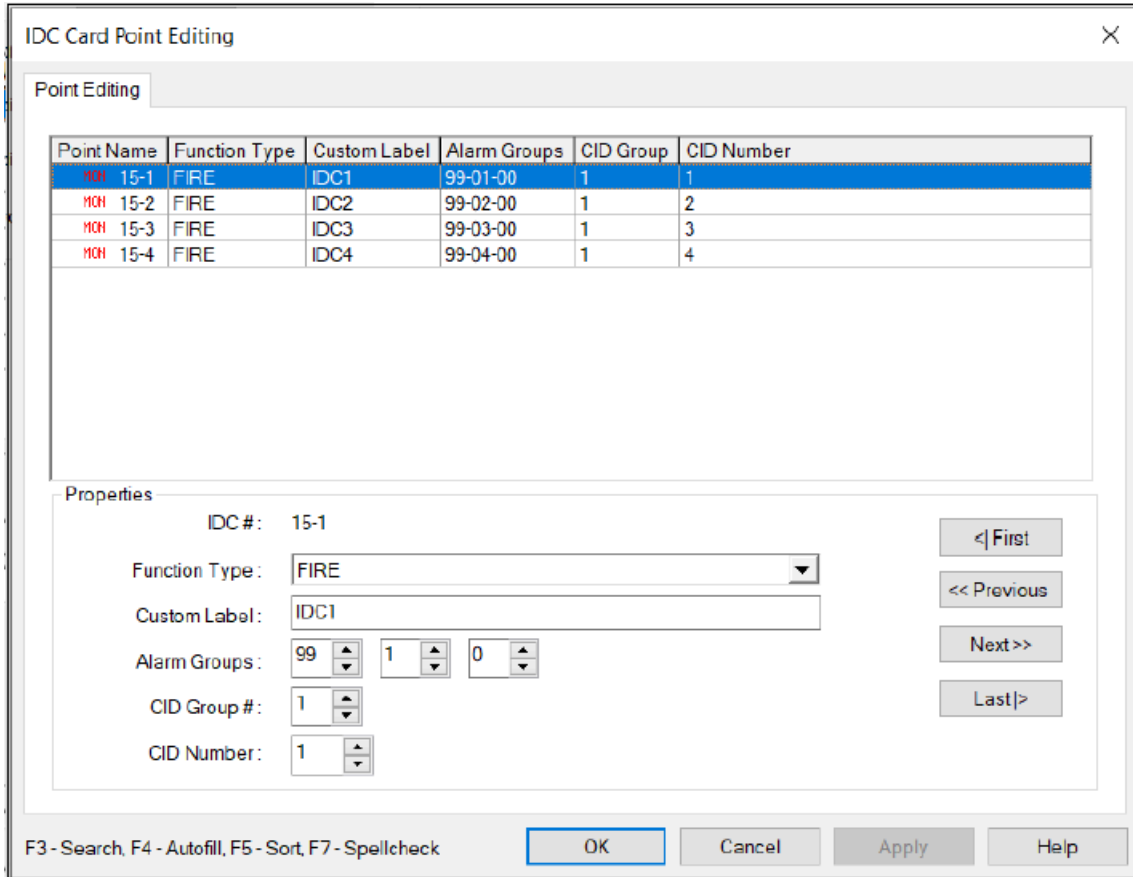
5.2.1 Selecting the IDC function type

Select **Function Type** to determine the way that the IDC operates. For example, whether the zone is a fire, trouble, waterflow or sprinkler zone.

To set the IDC function type, complete the following steps:

1. Click the **Function Type** drop down list box. The list of options described in Table 4 appears.
2. Scroll through the list and select the appropriate function type.

Table 4: IDC function type information

Function type	Device state and status	Description
FIRE	Normal = NORMAL Current Limited = FIRE Short = FIRE Open = TROUBLE	Fire monitor zone
WATER	Normal = NORMAL Current Limited = FIRE Short = FIRE Open = TROUBLE	Waterflow monitor zone
HEAT	Normal = NORMAL Current Limited = FIRE Short = FIRE Open = TROUBLE	Heat detector zone

Table 4: IDC function type information

Function type	Device state and status	Description
DUCT	Normal = NORMAL Current Limited = FIRE Short = FIRE Open = Trouble	DUCT detector zone
DRILL	Normal = OFF Abnormal = ON Short = ON Open = TROUBLE	Drill switch
PULL	Normal = NORMAL Current Limited = FIRE Short = FIRE Open = TROUBLE	Pull station zone
SMOKE	Normal = NORMAL Current Limited = FIRE Short = FIRE Open = TROUBLE	Smoke detector zone
SO	Normal = NORMAL Current Limited = Supervisory Short = Supervisory Open = TROUBLE	Sprinkler supervisory zone
WSO	Normal = NORMAL Current Limited = Supervisory Short = Alarm Open = TROUBLE	Combination waterflow and water supervisory zone
SUPV	Normal = NORMAL Current Limited = Supervisory Short = SUPERVISORY Open = TROUBLE	Supervisory monitor
UTIL	Normal = OFF Current Limited = ON Short = ON Open = TROUBLE	Supervised utility monitor
TROUBLE	Normal = OFF Current Limited = TROUBLE Short = TROUBLE Open = TROUBLE	Trouble monitor
VSMOKE See note below	Normal = NORMAL Current Limited = VERIFY Short = FIRE Open = TROUBLE	Verified fire alarm - the abnormal (current-limited) state causes the alarm verification cycle to start. A short is an immediate alarm.
STYLEC	Normal = NORMAL Current Limited = FIRE Short = TROUBLE Open = TROUBLE	Style C fire monitor
LATSUPV	Normal = NORMAL Current Limited = SUPERVISORY Short = SUPERVISORY Open = TROUBLE	Latching supervisory monitor (supervisory latches until system reset)

Note: The alarm verification cycle works for each zone as follows:

- Only connect smoke detectors to IDCs with the VSMOKE function type. If a device with the function type VSMOKE enters a current limited state, the alarm verification cycle begins. The control unit starts a delay timer of 25 seconds. When the timer expires, the zone

containing the activated detector is reset. Following the reset, another 15 second timer starts. When the 15 second timer expires,the system checks the zone for an alarm. If a current-limited condition exists on the zone, the control unit initiates a fire alarm. If no current-limited condition exists, the control unit starts a 2 minute timer. While the timer is counting down, any current-limited condition on any zone will trigger a fire alarm.

- Only connect the following detectors to IDCs with the VSMOKE function type:

  - Smoke detectors without an alarm verification feature

  - Smoke detectors with an alarm verification feature of less than 10 sec that do not reset

A short from a pull-station always triggers an alarm condition, regardless of the alarm verification cycle.
At any stage of the alarm verification cycle, the presence of two devices in alarm triggers an alarm condition.

5.2.2 Selecting the IDC custom label

To assign a 20-character custom label to each IDC point, select the **Custom Label** field, see Figure 29.

1. Type the text for the label in the **Custom Label** field.

2. As you type letters in the field, the programmer suggests possible words for the label. For example, typing GAR causes the control unit to suggest the word GARAGE. To accept the programmer's suggestion, press **CTRL-F**.

5.2.3 IDC alarm groups

Each IDC can be in up to three groups. To program selective signaling. Assign the IDC an alarm group number from 0 to 99. Assign the same alarm group number to the initiating devices that you want to control the IDC.
Enter a value for any one of the three alarm groups using either of these methods:

• Use the pointer to select the existing entry and type the new entry in the field.
• Use the field's controls to increment or decrement the value.

5.2.4 IDC CID group and number

If the control unit's DACT is using the Contact ID (CID) reporting format, follow these instructions to set the CID group and ID for each IDC point. If the control unit either is not using a DACT, or the DACT reporting format is not Contact ID, skip this section.
Enter a value for the CID Group and ID using either of these methods:

• Use the pointer to select the existing entry and type the new entry in the field.
• Use the field's controls to increment or decrement the value.

5.3 Programming NACs

Use the following procedure to edit the programming of the two Notification Appliance Circuits (NACs) on the panel.

1. For **Hardware** tab settings, see Figure 28.

2. To program up to two numbers of NACs in Class-B wiring style, click the **Edit Points** button to the right of **Standard NACs (Notification Appliances)**. See Figure 31.

Figure 31: Class-B NACs properties screen
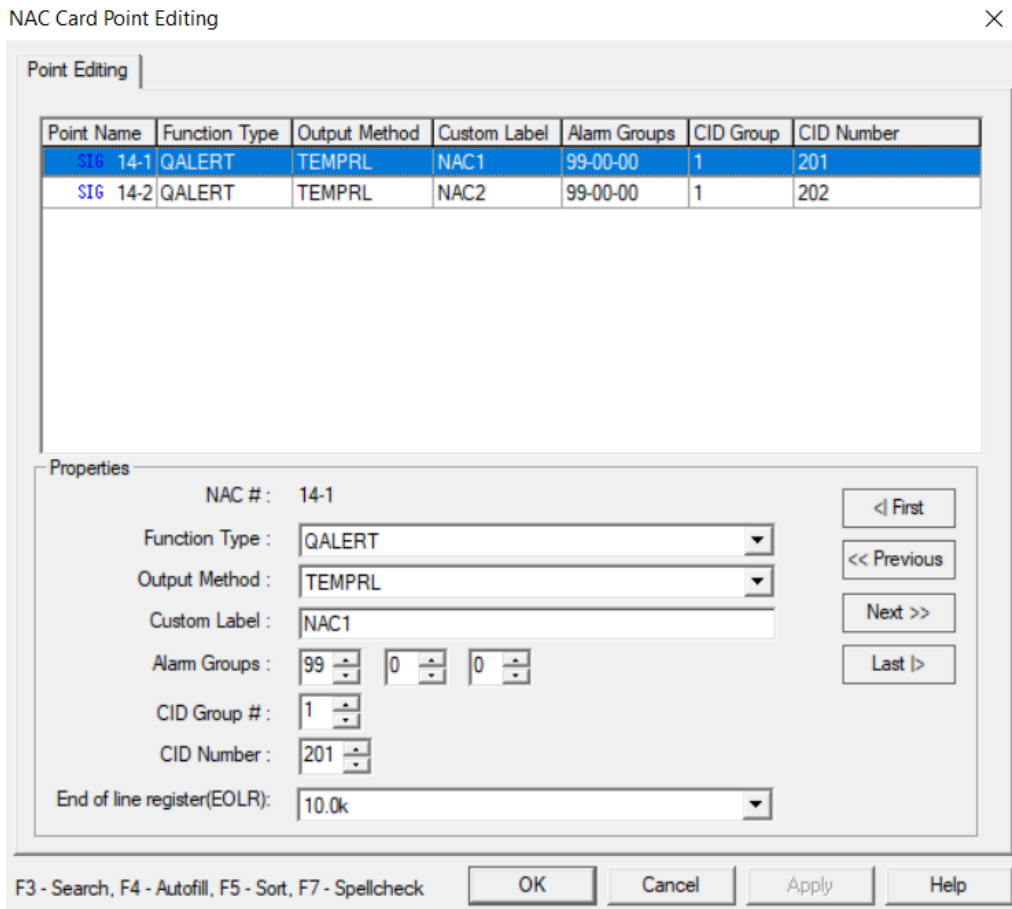
3. To program up to two numbers of NACs in Class-B wiring style, click the **Edit Points** button to the right of **Standard NACs (Notification Appliances)**. See Figure 32.

Figure 32: Class-A NACs properties screen

5.3.1   Selecting the NAC function type

Select the **Function Type** to determine the way that the NAC operates, for example, whether it is an audible or visual, and its output method (steady, etc.). To select the NAC function type, complete the following steps:

1. Click the **Function Type** drop down list box. The list of options described in Table 5 appears.

2. Scroll through the list and select the appropriate function type.

Table 5: Information on NAC function type options

Function Type	Description
QALERT	General alarm horn and strobe (Horn on until silence. Strobe on until reset). Use for NAC circuits containing both horns and strobes. **Note:** If NFPA NAC is enabled, then both horns and strobes will turn off on pressing the **Silenced** key.
SSIG	General alarm (on until silence). Use for NAC circuits containing only audible devices. If you use NAC circuits to connect external sync modules, set coding pattern as **Steady**.
RSIG	General alarm (on steady until reset). If you use NAC circuits to connect visual-only devices, set coding pattern as **Sync**. If you use NAC circuits to connect external sync modules, set coding pattern as **Steady**.
SUPV	NAC activates when there is a supervisory condition active in the system. NAC is on until you acknowledge the supervisory condition.
TRBL	NAC activates when there is a trouble condition active in the system. NAC is on until you acknowledge the trouble condition.
UTILITY	NAC activates when an IDC with the following attributes activates: • IDC must be in the same alarm group as utility NAC. • IDC must be assigned a utility function type. Typically used for process monitoring function. For example, a relay on a machine is tied to the IDC. When the relay activates, the utility IDC activates and triggers the utility NAC.

5.3.2 Selecting the NAC output method

Use the **Output Method** option to determine the pattern sent to the appliances by the NAC. For a list of available choices see Table 6. Click the **Output Method** drop down list box. The list of options shown in Table 6 appears.

Table 6: Information on NAC output method options

Output Method	Description
Temporal	Standard Temporal coded pattern. A three pulse coding pattern consisting of three 1/2 second pulses, each separated by 1/2 second silence. Each group of three pulses is separated by 1.5 seconds of silence.
Synch	Generates synchronization pulse for visual only devices connected to NAC circuits.
Steady	Steady On
20 BPM	Slow March Time - 20 beats every minute. See the following note.
120 BPM	Fast March Time - 120 beats every minute. See the following note.

Note: 60 BPM march-time rate is used when both the QALERT function types are selected and either 20 BPM or 120 BPM is selected as the NAC coding pattern.

5.3.3 Selecting the NAC custom label

The **Custom Label** field allows you to assign a 20-character custom label to each NAC point. To set the NAC custom label, complete the following steps:

1. In the **Custom Label** field, type the text for the label.
2. As you type letters in the field, the programmer suggests possible words for the label. For example, typing GAR causes the control unit to suggest the word GARAGE. Press **CTRL-F** to accept the suggestion.

5.3.4 NAC alarm groups

With alarm groups you can program selective signaling. Each NAC can be in up to three groups. Assign the NAC an alarm group number from 1 to 99. Assign the same alarm group number to the initiating device(s) that you want to control the NAC.

Enter a value for one of the three alarm groups using either of these methods:

- Use the pointer to select the existing entry and type the new entry in the field.
- Use the field's controls to increment or decrement the value.

5.3.5 NAC end-of-line resistor

The **End of line resistor (EOLR)** field allows you to select an EOLR for each NAC in Class-B wiring style, see Figure 33. To assign an EOLR to a NAC point, complete the following steps:

1. Click the **End of line resistor (EOLR)** drop down list box.
2. Scroll through the list and select the appropriate resistor value see Figure 33.

Note: If NAC Class A setting is On, the default EOLR would be 10K.

Figure 33: EOLR
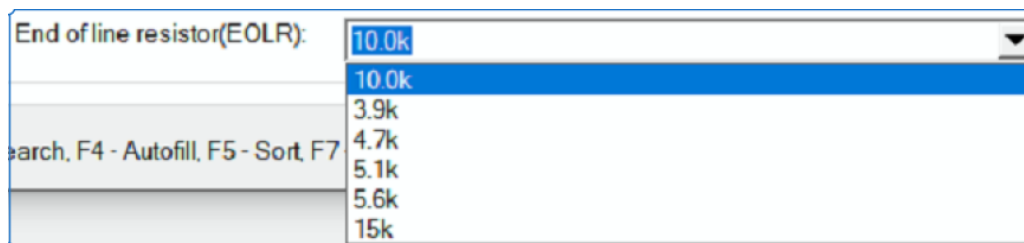
5.4   Programming relays

AUX relay programming allows you to define the following for the first auxiliary relay located on the main sytem board (MSB).
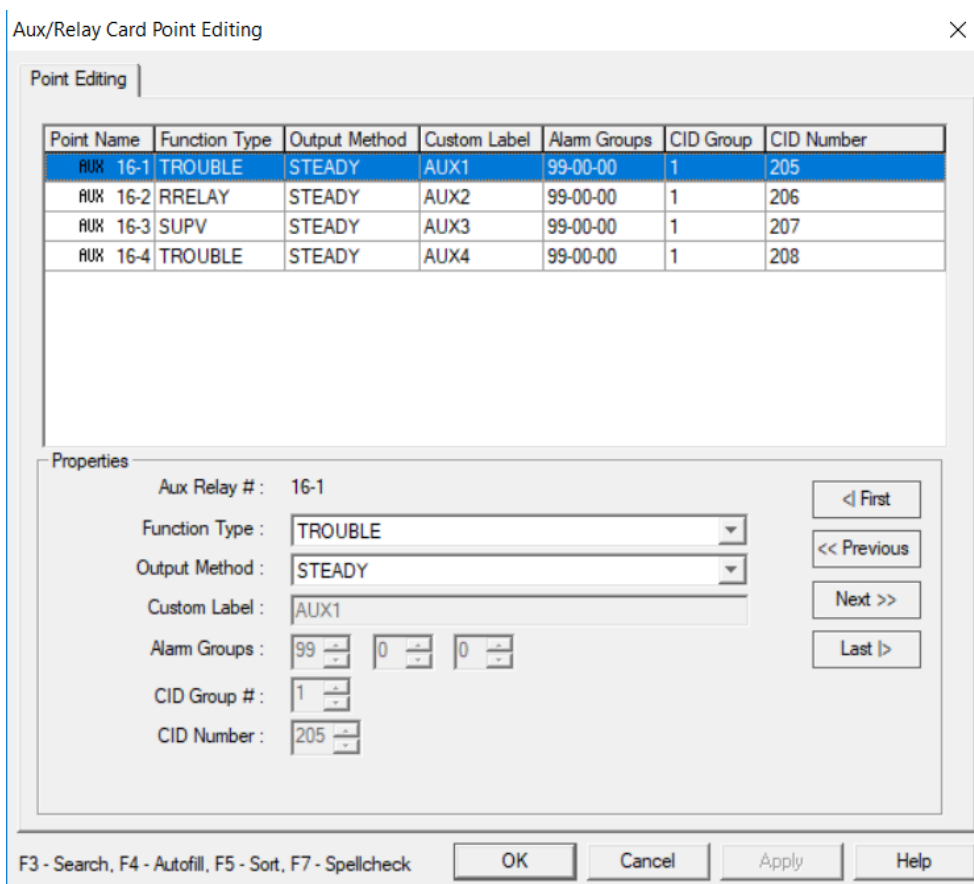
Note: Relay 1, is the first **standard** relay on the control unit's MSB, is always a trouble relay.

- **Function**: Defines when the relay activates and deactivates.
- **Output Method**: Defines how the relay activates (coded, steady, etc.).
- **Custom Label**: Allows you to set a 20 character label for the relay point.
- **Alarm Group**: Allows you to associate the relay with up to three groups of initiating devices, providing the ability to perform selective activation of the relay.

To edit the programming of a relay, complete the following steps:

1. For **Hardware** tab setting, see Figure 28.
2. To program relays, click the **Edit Points** button to the right of **Standard AUX Relays**. See the following figure.

Figure 34: Aux relay properties screen

5.4.1 Selecting the aux relay function type

Table 7 lists the AUX relay function types. To select the AUX relay function type, complete the following steps:

1. Click the **Function Type** drop down list.
2. Select a function type. See Table 7.

Table 7: AUX relay function type information

Function Type	Description
SRELAY	Relay activates on general alarm. Remains on until silence.
RRELAY	Relay activates on general alarm. Remains on until reset.
SUPV	Relay activates when a supervisory condition occurs. Remains on until acknowledge.
TRBL	Relay activates when a trouble condition occurs. Remains on until acknowledge.
Utility	Relay activates when a utility IDC in the same alarm group activates
PRIMARY See note below	Relay activates on general alarm. Relay is tied to Primary Elevator Recall contacts.
ALTERN See note below	Relay activates on general alarm. Relay is tied to Alternate Elevator Recall contacts.
DRESET	Relay provides 24 V power to four wire detectors. Relay turns off for 5 seconds on system reset.
DHOLDER	Relay typically provides 24 V to larger door holder relay with separate power source. Relay activates on general alarm and signals door holder relay to cut power to door holder magnets.

Note: Elevator recall requires the following:

- The relay must have a function type of Primary or Alternate and must be wired to the appropriate elevator control contact.
- The IDC zones used to trigger elevator recall must be associated with the following alarm groups:
  - Alarm Group 98: Associate all zones used to recall the elevator to the primary floor in this alarm group.
  - Alarm Group 97: Associate all zones used to recall the elevator to the alternate floor in this alarm group.

5.4.2 Selecting the aux relay output methods

Table 8 lists the AUX relay output methods.

To select the AUX relay output method, complete the following steps:

1. Click the **Output Method** drop down list box. See the following table.
2. Select an output method.

Table 8: Relay output methods

Operation	Description
Steady	Steady on

5.4.3 Selecting the aux relay custom label

The **Custom Label** field allows you to assign a 20-character custom label to each relay point.

1. In the **Custom Label** field, type the text for the label. As you type letters in the field, the programmer suggests possible words for the label. For example, typing GAR causes the control unit to suggest the word GARAGE.
2. Press **CTRL-F** to accept the suggestion.

5.4.4   AUX relay alarm groups

With alarm groups you can program selective signaling. Each relay can be in up to three groups. Assign the relay an alarm group number from 1 to 99. Assign the same alarm group number to the initiating devices that you want to control the relay.

Enter a value for one of the three alarm groups using either of these methods:

- Use the point to select the existing entry and type the new entry in the field.
- Use the field's controls to increment or decrement the value.

6   Annunciators
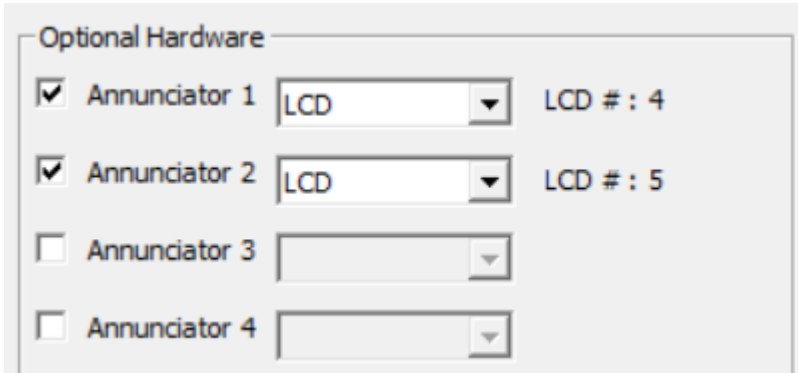
This chapter describes identifying the installed annunciators.

6.1   Identifying installed annuciators

To identify installed annuciators, complete the following steps:

1.   Click the **Hardware** tab. Figure 35 shows the **Annunciator** section of the **Hardware** tab which defines the annunciator attributes.

Figure 35: Annunciator section on the hardware tab

2.   Check the appropriate check boxes to the left of the Annunciator field to select the Annunciators. Figure 35 shows selection of **Annunciator 1** and **Annunciator 2**.

3.   The drop down to the right of the annunciator fields has default LCD type which cannot be changed.

7   Programming the DACT

The control unit's DACT (Digital Alarm Communicator Transmitter) allows the control unit to use one or two telephone lines to call a central station and report a local alarm, trouble, or supervisory condition.

This chapter describes programming the DACT options to specify the characteristics of the DACT's phone connection, communication format, and the format of the event or CID codes used by the central station.

7.1   Adding the DACT

To add the DACT, complete the following steps:

1.   Click the **Hardware** tab. Figure 36 shows the section of the **Hardware** tab used to define annunciator attributes.

Figure 36: Defining annunciator attributes
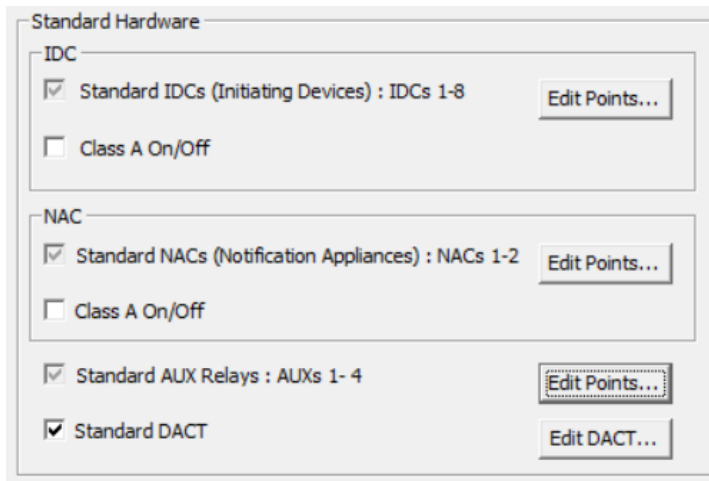
2.   Check the **Standard DACT** box to indicate the DACT is installed.

7.2   Setting basic DACT options

To set the basic DACT options, complete the following steps:

1.   Click the **Edit DACT** button to the right of the **Standard DACT** checkbox. For the location of the **Edit DACT** button see Figure 36.
2.   Click the **Basics** tab from the **DACT Card Editing** window.

Figure 37: DACT **Basics** tab

7.3 Setting phone and account numbers

Use the following guidelines to enter the primary and secondary account and phone numbers.

Primary and secondary phone numbers, these are supplied by the central station.

When an event occurs, the DACT attempts to send event information to the primary phone number. If the event information is not sent, the DACT attem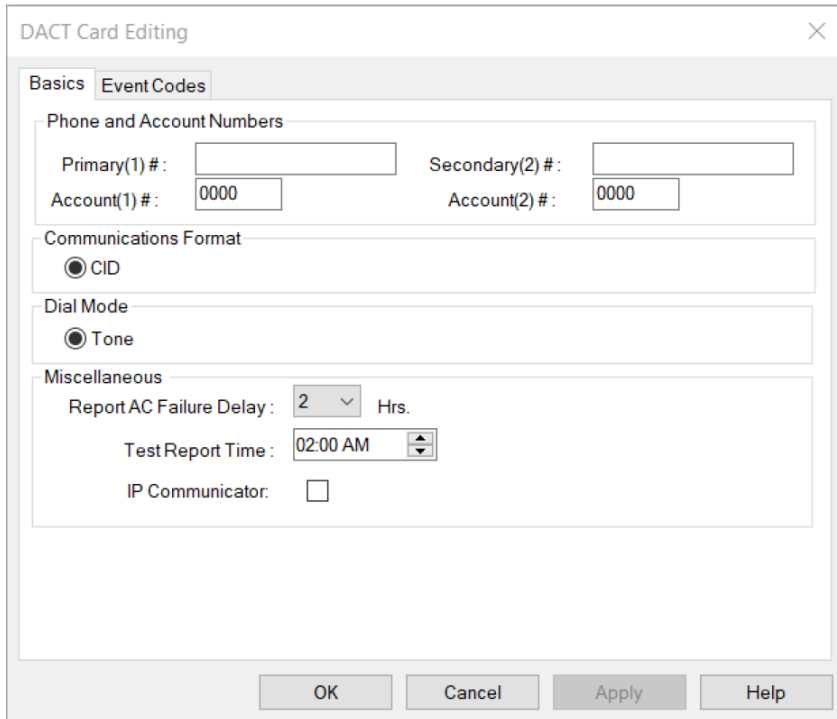pts to send the information to the secondary phone number. The DACT will make up to 10 attempts to send the information, alternating between the primary and secondary phone numbers.

Note: The following special characters are available for use when setting the primary and secondary phone numbers.

· **B**: Use if it is necessary to input a DTMF (touchtone) asterisk (*) into the phone number.
· **C**: Use if it is necessary to input a DTMF pound sign (#) into the phone number.
· **D**: Inserting this character into the phone number causes a 3 second delay at the point where the D appears.
· **E**: This character causes the DACT to wait 2 seconds for a secondary (outside line) dial tone. It may be necessary to use this character if you must dial a specific number (9, for example) to get an outside line on the phone system. For example, **9E** would cause the DACT to request an outside line and then wait 2 seconds for the secondary dial tone before proceeding with the rest of the phone number. If you use the **E** special character, make sure to set the **Dial Mode** to **Tone**; do not use Tone else Pulse.
· Primary and secondary account: These are unique four digit identifiers assigned by the central station.

7.3.1 Communication format

Make sure to determine, from an authorized person at the Central Station, the required communication format. The DACT can report in only the following communication formats:

· **Contact ID (default):** Uses a four digit account code, followed by a two-digit group number and three digit contact number.

7.3.2 Setting the Dial Mode

The **Dial Mode** specifies the type of phone line being used by the DACT. This is set as **Tone**.

7.3.3 AC fail delay

The AC fail delay allows you to specify the interval between the power loss at the control unit and when the DACT notifies the central station of the power loss.

The choices are:

· 0 to 24 hours
· Default setting is 2 hours

'

7.3.4 Test report time

This option specifies the time when the **Test Report Event** is sent to the central station. Time is set in 12 hour format.

7.4 Programming contact ID (CID) points

Use this section only if the DACT uses Contact ID (CID) reporting format. CID reporting format requires you to specify the group and Contact ID for each point, but there is no need to specify the type of event with the CID format. This information is automatically derived from the function type of the point.
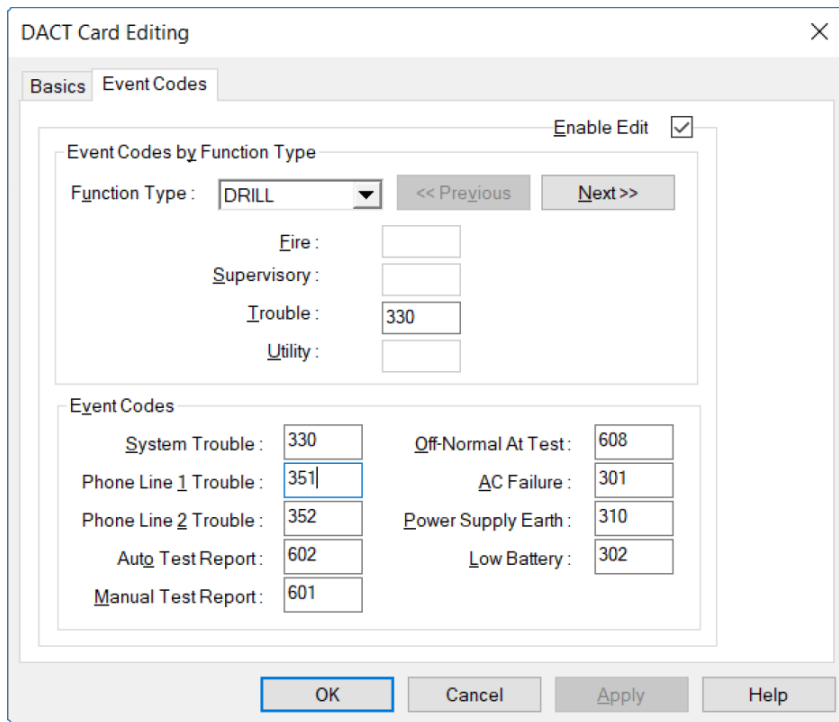
Note: Default CID point values are provided in the control unit. Before changing these values, contact an authorized representative at the central station.

To change the CID codes, complete the following steps:

1. Make sure that the **Communication Format** setting is **CID**.

2. Click the **Event** tab.

3. Click the **Enable Edit** check box.

4. Edit the fields as directed by the Central Station.
   Figure 38 shows the **DACT Card Editing** dialog for editing the CID codes.

   Note: The fields accept only numeric values. A warning message is shown if alphabetic characters are entered.

Figure 38: Changing the CID codes

The following table lists the default CID event code for each function type.

Table 9: Default CID codes

Function type	Default CID event code
SMOKE	111
VSMOKE	111
PULL	115
FIRE	110
STYLEC	110
SUPV	200
LATSUPV	200
WSO	113
WATER	113
TROUBLE	330
System Trouble	330
Phone Line 1 Trouble	351
Phone Line 2 Trouble	352
Auto Test Report	602
Manual Test Report	601
Off Normal At Test	608
AC Failure	301
Power Supply Earth	310
Low Battery	302

7.5 DACT line scanning logic

7.5.1 DACT line scanning during Central Station communication process

1. If there is any trouble or alarm event present on the panel, the panel tries to send them to the Central Station through DACT line 1 and line 2. DACT line 1 is the first to be used and then DACT line 2 is used.

2. The panel tries to communicate using the configured primary and secondary numbers. The first primary number is dialed, and then the secondary number is dialed.

3. Each number is tried 5 times before displaying a Central Station trouble. If the panel receives acknowledge from the Central Station, then the panel stops dialing the number.

4. To dial 10 times to the Central Station, the panel needs approximately 15 minutes. When the panel is trying to reach the Central Station using DACT line 1 and line 2, during dialing activity, the panel is not able to evaluate any DACT line troubles.

5. After the dialing activity has completed or if the panel receives a response from Central Station, the panel starts scanning DACT lines again for troubles.

6. If the panel receives an acknowledgment from the Central Station during the dialing process, then the panel starts scanning DACT line 1 and line 2 again for troubles.

7.5.2 Instances when DACT line scanning is done by the panel

During a no trouble condition, the panel continuously scans DACT line 1 and line 2 for troubles. After all troubles are communicated to Central Station, the panel starts scanning again DACT line troubles.

7.5.3 Instances when DACT line scanning is stopped by the panel

If the panel detects any troubles, then the panel starts dialing the numbers to connect with the Central Station. During this dialing period, the panel will not be able to continue DACT line trouble scanning as DACT lines

7.5.4 Instances when both DACT lines get removed / disconnected from the panel

1. As previously mentioned, the panel continuously scans DACT line 1 and line 2 sequentially one by one, to detect DACT line troubles.

2. If both lines are simultaneously disconnected from the panel, then trouble for any one of the DACT line 1 or line 2 appears on the panel.

3. As soon as the panel detects any DACT line trouble, the panel uses the other DACT line and starts to communicate this event to the Central Station.

4. During communicating a trouble to Central Station, the panel does not scan the DACT lines for trouble.

5. In this case, both lines are removed from the panel, but the panel detects the status as one line with trouble, and other line is not yet scanned. That is, it is deemed to function correctly.

   Example:

   a. A user removes both of the lines from the panel. The panel detects line 1 trouble.

   b. The panel starts calling the Central Station using line 2. During this period, the panel does not scan line 2.

   c. As both lines are removed, the panel can not receive any acknowledgment from the Central Station.

   d. The panel takes approximately 15 minutes to complete the dialing process as previously outlined.

   e. After approximately 15 minutes, the panel notifies Central Station trouble. During this period, if new events are raised on the panel, the panel makes an attempt to communicate those to the Central Station using line 2. The panel removes those from the internal message queue, also the panel does not save any troubles that occur during this calling time in the internal message queue.

   f. The panel starts saving troubles in the internal message queue only when Central Station trouble is detected.