

4100ES Fire Alarm System



Operator's
Manual

579-197
Rev. L



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Chapter 1

Basic Concepts and Operations

Introduction

This chapter provides an overview of the operator interface panel and describes the normal appearance of the operator interface panel.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Basic System Description	2
Normal Appearance of Operator Interface Panel	4

Basic System Description

Overview

The Simplex 4100ES Fire Alarm Control Panel (FACP) has three general functions.

- It monitors fire alarm *initiating points* (smoke detectors, heat detectors, and pull stations).
- It activates fire alarm *notification appliances* (horns, strobes, audio evacuation messages) when an initiating point activates.
- It monitors and controls auxiliary building equipment (fan dampers, relays, security devices).

Note: The term point is used extensively throughout this manual. It is a generic term used to refer to an individual component of the system, such as a single smoke detector, a single pull station, etc.

The operator interface, shown in Figure 1-1, allows a system operator to control and monitor the facility-specific components connected to the FACP.



Figure 1-1. Operator Interface

Table 1-1. Components of the Operator Interface

LED/Key	Description	Refer To
Fire Alarm LED and Fire Alarm ACK Key	The Fire Alarm LED flashes to indicate the presence of an unacknowledged alarm condition. Other components of the system, such as the horns and strobes, also activate to indicate the presence of an alarm. The FIRE ALARM ACK key allows you to indicate that you have observed the presence of an alarm.	Chapter 2
Alarm Silenced LED/Alarm Silence Key	Pressing the ALARM SILENCE key provides a means of silencing the building's audible notification appliances (horns). The LED indicates when this key has been used.	Chapter 2
Priority 2 Alarm LED and Priority 2 ACK key	The priority 2 LED flashes to indicate the presence of an unacknowledged Priority 2 Alarm. Press the Priority 2 Alarm key to acknowledge a Priority 2 Alarm condition, this logs the acknowledge, silences the piezo, and silences all annunciator tone alerts.	Chapter 2

Continued on next page

Basic System Description, *Continued*

Overview

Table 1-1. Components of the Operator Interface (*continued*)

LED/Key	Description	Refer To
System Warning Keys and LEDs	The System Warning LEDs – Supervisory and Trouble – indicate when abnormal, non-fire conditions occur to the fire alarm’s wiring or devices. The System Warning keys – SUPV ACK and TROUBLE ACK – allow an operator to acknowledge the presence of the abnormal condition.	Chapter 3 for Troubles. Chapter 4 for Supervisory Conditions
System Reset Key	Pressing this key directs the panel to reset all attached devices and clear all acknowledged alarms, troubles, and supervisory conditions.	Chapter 2
AC Power LED	Indicates the presence of AC power at the panel.	N/A
Event Time Key	Used to display the time at which an acknowledged alarm, trouble, or supervisory condition occurred.	Chapter 6
Entry Keypad	Used to call up points for monitoring and control.	Chapter 5
Facility-Specific Control Keys	These are programmable keys. Typical functions include manual evacuation, ground fault monitor, etc.	N/A
Enable/Disable Keys	Pressing these keys allows you to enable or disable devices attached to the panel.	Chapter 6
On/Off/Auto Keys	Pressing these keys allows you to force a device (such as a relay) ON or OFF. The Auto key returns control of the device to the panel.	Chapter 6
Arm/Disarm Keys	Used with security points. These keys allow you to turn security devices on (arm) or off (disarm).	Chapter 6
Alphanumeric Display	Displays text describing abnormal conditions for devices attached to the panel (i.e., smoke detector in main lobby is in alarm). Also displays system prompts and messages.	

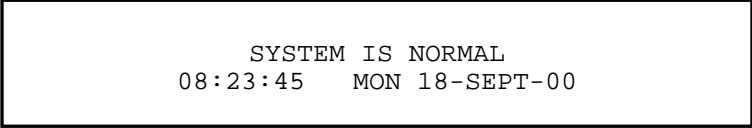
Important Note: The degree to which you are allowed to control the system depends on the passcode assigned to you. See “Logging in and Out of the System” for details on this.

Normal Appearance of Operator Interface Panel

Description

The operator interface panel shows the following under normal conditions.

- Green power LED is ON – indicating the panel is receiving AC Power.
- All other LEDs off.
- Alphanumeric display reports that the system is normal, as shown below.



SYSTEM IS NORMAL
08:23:45 MON 18-SEPT-00

Chapter 2

Alarm Conditions

Note: If the appearance of the operator interface panel is not as shown above, refer to the information in Chapters 2, 3, and 4 for instructions on managing the alarm, supervisory, or trouble condition.

Introduction

An alarm condition occurs when an initiating device (such as a manual pull station, smoke detector, etc.) activates. The FACP indicates the presence of the alarm condition through messages it displays on the alphanumeric display, by flashing the ALARM indicator, and by activating the building's notification appliances (horns and strobes).

Note: An alarm condition is a serious event, indicating the possibility of fire danger. In addition to using the operator interface panel to investigate and manage alarm conditions as described in this chapter, you should also be aware of any facility-specific procedures that you may be required to follow.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

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Silencing an Alarm	9
Resetting the System	10
Disabling a Point that Remains in Alarm	12

Acknowledging an Alarm

How the FACP Indicates that an Alarm has occurred

When an alarm condition is detected by the FACP, the panel does the following to indicate the presence of the alarm.

- Red LED, labeled Fire Alarm flashes
- Tone-alert (piezo buzzer) pulses
- LEDs on remote annunciators may illuminate
- The alphanumeric display on the interface panel indicates an alarm condition. The exact manner in which the alphanumeric display reports information for the alarm condition depends on whether the system's Display First Alarm Option is enabled.
 - **If Display 1st Alarm Option is Enabled.** The display alternates between two screens similar to Screen 1 and Screen 2 shown below. Screen 1 is a tally screen indicating the total number of fire alarms, priority 2 alarms, supervisory conditions, and trouble conditions present on the panel. Screen 2 is a detailed description of the first alarm received by the panel.

Screen 1

```
**FIRE**          Press (ACK) to review.  
FIRE = 1   PRI2=0   SUPV=0   TRBL=0
```

Screen 2

```
FIRST FLOOR EAST WING   ROOM 31  
PULL STATION
```

- **If Display 1st Alarm Option is not enabled.** Only a screen similar to Screen 1 appears, indicating the total number of alarm conditions present on the system.

Overview – Acknowledging Alarms

The first step in managing an alarm condition is to *acknowledge* the alarm. Acknowledging an alarm does two important things:

- It records the time and date at which you observed the presence of an alarm, trouble, or supervisory condition on the operator interface panel and stores that information in the system's historical log.
- When you press the **Fire Alarm Ack** key, the system displays specific data on the location of the alarm.

It is important to understand that the FACP can be configured with either *Global* or *Individual* Acknowledge. These options function as follows:

- **Global Acknowledge.** When global acknowledge is enabled, one press of the **Fire Alarm Ack** key acknowledges *every* abnormal point currently reporting an alarm status. This is helpful when a series of devices enter an alarm state (for example, all of the smoke detectors in an area of the building) and you want to acknowledge all of them at the same time.
- **Individual Acknowledge.** If individual acknowledge is enabled, the **Fire Alarm Ack** key must be pressed to individually acknowledge each alarm. Individual acknowledge must be selected if the panel is providing proprietary receiving service in accordance with NFPA72.

The **Fire Alarm Ack** key, which is used to acknowledge alarms (either globally or individually), is located just beneath the **Fire Alarm** LED.

Acknowledging an Alarm, *Continued*

Globally Acknowledging Alarms

Use the following procedure if the Global Acknowledge option is enabled on your system.

1. Unlock and open the enclosure door. Read the alphanumeric display on the interface panel. It reports the number of alarm conditions as shown below.

```
**FIRE**          Press <ACK> to review.  
Fire =1          PRI2 = 0          SUPV = 0          TRBL=0
```

2. Press the **Fire Alarm Ack** key. Read and follow the instructions on the alphanumeric display. After you press the **Fire Alarm Ack** key, the system responds as follows:
 - The tone-alert silences and the alphanumeric display reports pertinent information about the alarm, such as the following:

```
FIRST FLOOR EAST WING          ROOM 31  
PULL STATION                   FIRE ALARM
```

- The **Fire Alarm** LED changes from flashing to steady ON, and all alarm conditions are acknowledged.
- Pressing the **Fire Alarm Ack** key again displays information on the next alarm. Continue to do this to review all alarms in the system.

Individually Acknowledging Alarms

Use the following procedure if the Individual Acknowledge option is enabled on your system.

1. Unlock and open the enclosure door. Read the alphanumeric display on the interface panel. It reports the number of alarm conditions as shown below.

```
**FIRE**          Press <ACK> to review.  
Fire =1          PRI2 = 0          SUPV = 0          TRBL=0
```

2. Press the ALARM ACK key. A report similar to the one shown below appears. Read and follow the instructions on the alphanumeric display.

```
FIRST FLOOR EAST WING          ROOM 31  
Press ACK key to acknowledge ALARM  
PULL STATION                   ALARM
```

Continued on next page

Acknowledging an Alarm, *Continued*

Individually Acknowledging Alarms

-
3. Press the **Fire Alarm Ack** key again. Read the report data. Repeat this procedure to review all reports. Reports are displayed in chronological order.
 - Tone-alert silences when the last unacknowledged alarm is acknowledged.
 - **Fire Alarm** LED is ON, but is no longer flashing.
-

Silencing an Alarm

Overview

When an alarm condition exists, various signals (horns and strobes), auxiliary relays, the city connection (which is the link to the local fire department or central station monitoring service), and the tone-alert may activate. The ALARM SILENCE key turns OFF all devices that are programmed to turn off when it is pressed. Typically, this will be the audible notification appliances (horns).

Note: Depending on the programming of the system, some devices may not turn off when the ALARM SILENCE key is pressed.

At a minimum, the following occurs when the key is pressed.

- Turns OFF signal circuits (which usually connect to the Notification Appliances)
- Turns ON the ALARM SILENCED LED
- Displays a message indicating the ALARM SILENCE function is activated

You should be aware that the following functions affect the operation of the ALARM SILENCE function.

- If a **Coded Input Device** (typically a pull station) activates, the <ALARM SILENCE> key may be ignored until this function has completed coding. Notification appliances (horns) cannot be silenced when a coded station is in alarm, but silence upon coding completion.
- If the **Alarm Silence Inhibit Option** -- which is a timer that inhibits the operation of the ALARM SILENCE function -- is enabled, pressing the <ALARM SILENCE> key is ignored until the timer expires. The message “ALARM SILENCE INHIBITED” displays for a short time to indicate the action was not taken. The message “ALARM SILENCE NO LONGER INHIBITED” displays when the timer expires.
- If **Waterflow Sprinkler Devices** are activated, Notification Appliances may or may not be silenced (depending on local code requirements). Usually, a dedicated bell will continue to sound to indicate water flow.
- Some visual notification appliances may continue to flash until the system is reset.

Using the Alarm Silence Key

Press the <ALARM SILENCE> key and read the display. The alphanumeric display shows signal status and the ALARM SILENCE LED turns ON steady.

ALARM SILENCE IN PROGRESS

Resetting the System

Overview

The function of the SYSTEM RESET key depends on whether active alarms are present at the time the key is pressed.

- **Active Alarms Present.** Pressing the SYSTEM RESET key when alarms are present attempts to return the system to its normal state. This includes resetting initiating devices (pull stations and smoke detectors, for example), relays (including city relay and door holder relays), notification appliances (horns and strobes), and all LEDs and indicators that have been programmed to be reset with the SYSTEM RESET key. See “Resetting a System with Active Alarms” below for more information.
- **No Active Alarms Present.** Pressing the SYSTEM RESET key when no alarms are present causes the system to perform a hardware reset. See “Performing a Hardware Reset” below for more information.

Resetting a System with Active Alarms

Activated devices (i.e, devices in alarm) can be reset, using the SYSTEM RESET key. Doing this allows the system to return to a normal state following alarm activation. Follow these steps to perform a System Reset when alarms are present.

1. Press the SYSTEM RESET key. The following message appears.

```
SYSTEM RESET IN PROGRESS
```

2. One of the following occurs, depending on whether the activated devices reset or not.

- If all zones or devices in alarm reset, the **Fire Alarm LED** flashes. Press the **Fire Alarm Ack** key, and the following message appears.

```
SYSTEM IS NORMAL  
8:37:13 MON 18-SEP-00
```

- If a zone or device remains in alarm and fails to reset, the “SYSTEM RESET IN PROGRESS” message is followed by the message shown below.

```
ALARM PRESENT, SYSTEM RESET ABORTED
```

When this message appears, the system remains in an alarm state. The display indicates the total number of alarms present in the system along with a prompt to use the **Fire Alarm Ack** key to **review** the points. (These points do not require acknowledgment.) The **Fire Alarm LED** remains ON to indicate that a fire alarm device is still in the alarm condition. Read the display to determine the type and location of the device. Follow local procedures to investigate the area of the building in alarm. Look for devices that are in an alarm state -- pull stations with the handle down, smoke detectors with their LED lit.

Resetting the System, *Continued*

Performing a Hardware Reset

A hardware reset reinitializes the state of certain hardware components and is typically used to reset a Class A Trouble (for example, on a MAPNET, IDNet, or RUI channel) after the problem causing the trouble is resolved. If you attempt to perform a hardware reset without first fixing the problem causing the trouble, the hardware reset fails and the trouble reappears.

To perform a hardware reset, press the SYSTEM RESET key when no alarms are present.

Disabling a Point that Remains in Alarm

Overview

If a device remains in alarm and no alarm condition (i.e., smoke or an activated pull station) exists, the FACP provides a way to inhibit alarm reporting for the malfunctioning point. Disabling a point causes a trouble condition for the point or zone that you disable.

The <DISABLE> key, which is used to disable points, may be passcode protected. If it is, you need to first log in to the system using the passcode that enables the key. Refer to “Logging In and Out of the System” in Chapter 6 for information on doing this.

Important Notes

Be aware of the following issues related to disabling points.

- Disabling a point causes the point to NOT report alarm conditions or other status changes. A point should not be disabled unless it is clearly understood that fire detection or security for the area of the building covered by that point will be lost. Appropriate steps must be taken to provide alternate means of protecting the area of the building covered by the disabled point.
- If the Service Reset option is enabled, an operator can clear an alarm condition (i.e., successfully perform a system reset) even though the device that caused the alarm remains in a trouble state. The typical application for this would be the case where a malfunctioning initiating device such as a smoke detector (consisting of a base and removable sensor) causes an alarm and activates the city circuit. With this option enabled, the sensor can be removed and the system (including the city circuit) can be reset. Without this option enabled, removing the sensor would cause a trouble, which would prevent the city circuit from being reset.

Note: Service Reset is not a UL-Approved option and enabling this option on the panel invalidates the panel's UL certification.

Procedure

To disable a point in alarm, follow these steps.

1. Press the <ALARM ACK> key to display the point's information on the alphanumeric display. For example:

SECOND FLOOR EAST WING	ROOM 16
PULL STATION	ALARM

2. Press the <DISABLE> key. The alphanumeric display shows the following message.

PRESS <ENTER> TO DISABLE MONITOR ZONE: ZNXX
--

Note: XX represents the point to be disabled.

Disabling a Point that Remains in Alarm, *Continued*

Procedure

3. Press the <ENTER> key. The alphanumeric display shows the action taken.

ALARM PRESENT, SYSTEM RESET ABORTED

Note: The system indicates a trouble condition each time a point is disabled. It is important to repair the disabled point as soon as possible. Once repaired, the disabled point should be enabled as soon as possible.

Chapter 3

Trouble Conditions

Introduction

A Trouble message is used to indicate the presence of a circuit break or ground within a system point, or somewhere between the FACP and one of its points.

This chapter describes using the Operator Interface Panel keys to investigate the details of the trouble condition.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Overview	15
Acknowledging Troubles	17
If the Trouble Doesn't Clear	19

Overview

How the FACP Indicates the Presence of a Trouble

When a trouble condition is detected by the FACP, the panel does the following to indicate the presence of the trouble condition.

- Yellow LED, labeled “SYSTEM TROUBLE” flashes
- Tone-alert (piezo buzzer) sounds steady
- LEDs on remote annunciators may illuminate
- The alphanumeric display on the interface panel indicates trouble condition, as shown below

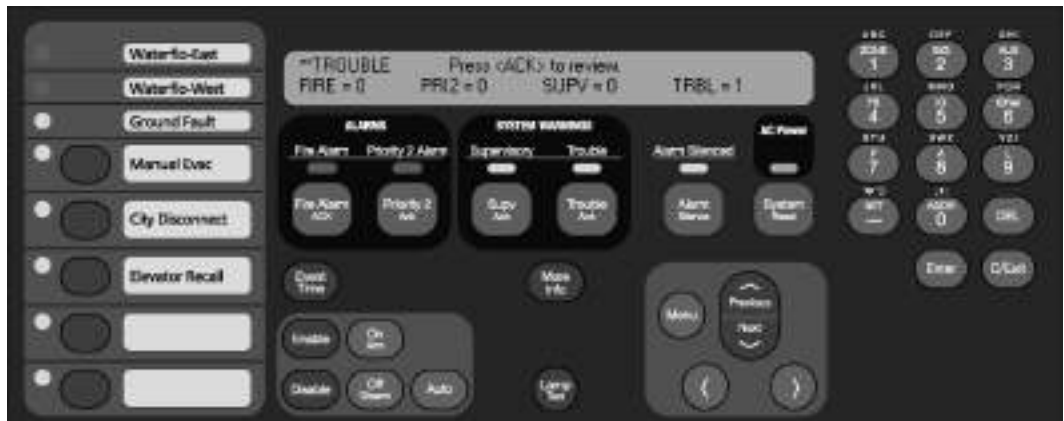


Figure 3–1. Interface Panel Showing Trouble Condition

What Acknowledge Does

The first step in managing a trouble condition is to *acknowledge* the trouble. Acknowledging a trouble does two important things:

- It records the time and date at which you observed the presence of the trouble and stores that information in the system’s historical log.
- When you press the acknowledge key, the system displays specific data on the location of the trouble.

It is important to understand that the FACP can be configured with either *Global* or *Individual* Acknowledge. These options function as follows:

Global Versus Individual Acknowledge

- **Global Acknowledge.** When global acknowledge is enabled, one press of the **Trouble Ack** key acknowledges *every* point currently reporting a trouble.
- **Individual Acknowledge.** If individual acknowledge is enabled, the **Trouble Ack** key must be pressed to individually acknowledge each trouble. Individual acknowledge must be selected if the panel is providing proprietary receiving service in accordance with NFPA72.

The **Trouble Ack** key, which is used to acknowledge troubles (either globally or individually), is located just beneath the SYSTEM TROUBLE LED. Refer to Figure 3-1. If the **Trouble Ack** key is passcode protected (by default, it is not), you cannot use this key to acknowledge troubles unless you have the required passcode.

Overview, Continued

Trouble Indications for TrueAlarm Sensors

TrueAlarm devices are considered *sensors* instead of detectors because these devices do not determine alarm conditions. Instead, the TrueAlarm smoke sensor is a measuring device that sends data regarding smoke density to the FACP. The TrueAlarm heat sensor operates in a similar fashion, but it sends temperature data to the control panel instead of smoke density data. Also, CO heat/smoke sensors operate just like the TrueAlarm heat/smoke sensors. The FACP uses this data to determine whether a trouble has occurred.

The TrueAlarm and CO sensors have three automatic trouble indications.

- **Dirty.** A “Smoke Detector Dirty” condition is reported any time the average value on an individual sensor reaches a set threshold value.
- **Excessively Dirty.** A “Smoke Detector Excessively Dirty” trouble condition is reported any time the average value of an individual sensor reaches a slightly higher threshold level.
- **Expired Trouble.** An “Expired Trouble” condition is reported anytime a CO sensor has reached the end of its useful lifetime.

In addition to the three automatic trouble conditions, the FACP software includes three pre-programmed digital pseudo points: P132, P463 and P464. The pseudo point P132 (Sensor Almost Dirty Log Enable) can be turned ON through the FACP PC Programmer application to allow a TrueAlarm sensor that is close to being dirty to report as if it were one. This is useful when maintenance is being scheduled for dirty sensors, as it provides a means of seeing which sensors are approaching a dirty state. The pseudo points P463 and P464 are used to log all the CO sensors that will expire in 6 and 12 months respectively.

Once a minute the FACP performs a test of each TrueAlarm sensor. The test raises the value of each sensor to a value that simulates an alarm condition. If the sensor reports back a value that is not within the alarm range, a “Self-Test Abnormal” trouble is displayed for the sensor.

What to Do when TrueAlarm Troubles Occur

System Operators should do the following when these troubles occur.

- **Almost Dirty Trouble.** In this case, a Simplex Technical Representative has programmed the system to allow almost dirty sensors to report as dirty. Contact your facilities management personnel to report the trouble and schedule maintenance (cleaning) for the sensors.
 - **Dirty.** This trouble means the sensor is holding its sensitivity, that maintenance should be scheduled for the sensor. Contact your facilities management personnel to report the trouble and schedule maintenance (cleaning) for the sensors.
 - **Excessively Dirty.** This trouble means the sensor is no longer compensating for dirt and dust. False alarms are possible in this condition and sensors should be cleaned as soon as possible. Contact your facilities management personnel to report the trouble and immediately schedule maintenance (cleaning) for the sensors.
 - **Self-Test Abnormal.** All TrueAlarm sensors are automatically tested once a minute. If a sensor fails to report properly to the FACP, a Self-Test Abnormal trouble occurs. This indicates that the sensor is not working properly and needs to be replaced. Contact your facilities’ management personnel to report the trouble.
 - **Expired.** This trouble means that the CORC (CO Replacement Cartridge) needs to be replaced.
 - **Almost Expired.** This trouble means that the CORC is almost at the end of its lifetime and would need to be replaced within 6 or 12 months, depending on the system configuration.
-

Acknowledging Troubles

Globally Acknowledging Troubles

If global acknowledge is enabled on the FACP, the system automatically clears after the source of the trouble clears. Approximately 30 seconds after the source of the trouble clears, the alphanumeric display should indicate a normal system.

To globally acknowledge trouble points, follow these steps.

1. Unlock and open the enclosure door. The alphanumeric display shows the trouble condition. For example:

```
**TROUBLE          Press <ACK> to review.  
FIRE = 0    PRI2 = 0    SUPV = 0    TRBL = 1
```

2. Press the **Trouble Ack** key under the flashing yellow LED. The alphanumeric display shows the area and type of trouble. The tone-alert silences and the yellow LED glows steady.

```
**TROUBLE          Press <ACK> to review.  
FIRE = 0    PRI2 = 0    SUPV = 0    TRBL = 1
```

3. Read the alphanumeric display and investigate the area to determine the cause of the trouble.
 - a. Restore or replace the defective device (switch, wire, notification appliance, etc.) in accordance with the device's instructions.
 - b. The trouble condition automatically clears when the problem has been corrected.
 - c. After a delay, the alphanumeric display reads:

```
          SYSTEM IS NORMAL  
8:36:28          FRI 15-SEP-00
```

Individually Acknowledging Troubles

When individual acknowledge is used, the tone-alert re-sounds when the condition clears. Individual acknowledge must be selected if the panel is providing proprietary receiving service in accordance with NFPA72. Follow these steps to use individual acknowledge.

1. Unlock and open the enclosure door. The alphanumeric display shows the trouble condition. For example:

```
**TROUBLE          Press <ACK> to review.  
FIRE = 0    PRI2 = 0    SUPV = 0    TRBL = 1
```

Acknowledging Troubles, *Continued*

Individually Acknowledging Troubles

2. Press the **Trouble Ack** key. Repeat this step and read the reports. You need to do this for each trouble event. The following occurs
 - The tone-alert silences and the LED glows steady
 - The alphanumeric display shows the area and type of problem, as shown below.

FIRST FLOOR EAST WING ROOM31
Press ACK key to acknowledge
FIRE MONITOR ZONE OPEN CIRCUIT TROUBLE

3. Read the alphanumeric display. Investigate the trouble to determine its cause. Restore or replace defective device (switch, wire, notification appliance, etc.) in accordance with the manufacturer's instructions.

When the trouble clears, the Trouble LED flashes and the tone-alert sounds steady.

4. Press the **Trouble Ack** key. The display shows the system status. Press the **Trouble Ack** key again. After a delay, the display shows that the system status is normal.
-

If the Trouble Doesn't Clear

Overview

Normally, trouble points do not require acknowledgment of the cleared condition. If the system does not clear, read the display. Check for devices still in trouble (pull stations with their handles down, smoke detectors with their LEDs ON). If the source of the trouble cannot be located, call Simplex to repair the system.

System Reset Key

Some troubles latch until they are reset manually, or are reset by pressing the SYSTEM RESET key. Try pressing the SYSTEM RESET key if the trouble is any one of the following:

- Style D initiating device circuit trouble
- City Circuit trouble
- 24 Point I/O trouble

If pressing the SYSTEM RESET key does not clear the trouble, or if the trouble toggles (clears and then reappears), you may choose to either disconnect the device or to disable the point, using the procedure outlined in the next section.

Disabling a Point with a Trouble Condition

Keep the following in mind when disabling points.

- Disabling a point causes the point to NOT report alarm conditions or other status changes. A point should not be disabled unless it is clearly understood that fire detection or security for the area of the building covered by that point would be lost. Appropriate steps must be taken to provide alternate means of protecting the area of the building covered by the disabled point.
 - Repair or replace the failed device or circuit as soon as possible. Once repaired, the disabled point should be enabled as soon as possible.
1. Press the **Trouble Ack** key to display the point's information on the alphanumeric display. For example:

```
SECOND FLOOR EAST WING          ROOM 16  
PULL STATION                    OPEN CIRCUIT TROUBLE
```

2. Press the DISABLE key. The alphanumeric display shows the following message.

```
PRESS <ENTER> TO DISABLE  
MONITOR ZONE:  ZNXX
```

Note: XX represents the point to be disabled.

If the Trouble Doesn't Clear, *Continued*

Disabling a Point with a Trouble Condition

3. Press the <ENTER> key. The alphanumeric display shows the action taken.



ACTION TAKEN

Note: The system indicates a trouble condition each time a point is disabled. It is important to repair the disabled point as soon as possible. Once repaired, the disabled point should be enabled as soon as possible.

Chapter 4

Supervisory Conditions

Introduction

A Supervisory trouble indicates a problem with the condition of the building's automatic sprinkler system or some other system used for the protection of life and property.

This chapter describes using the Operator Interface Panel keys to investigate the details of the supervisory condition.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Overview	22
Acknowledging Supervisory Conditions	23

Overview

How the FACP Indicates the Presence of a Supervisory Condition

When a supervisory condition is detected by the FACP, the panel does the following to indicate the presence of the condition.

- The yellow **Supervisory** LED flashes.
- Tone-alert (piezo buzzer) sounds steady.
- The alphanumeric display on the interface panel indicates supervisory condition, as shown below.

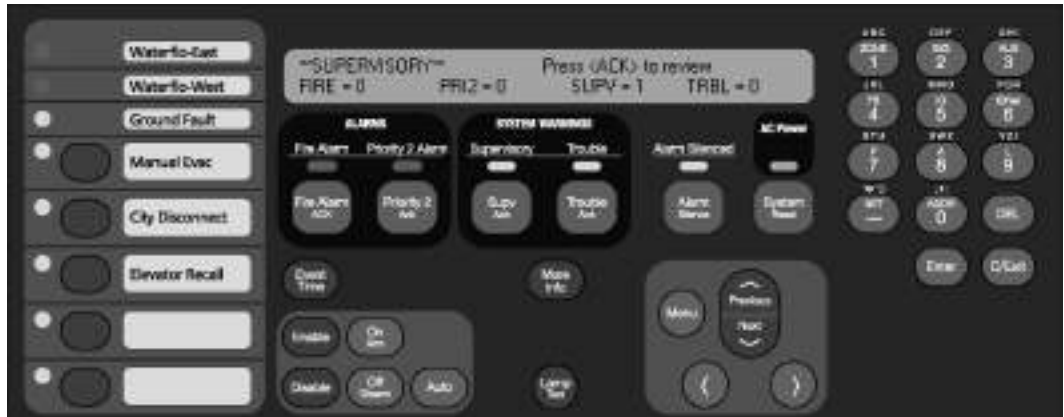


Figure 4–1. Interface Panel Showing Supervisory Condition

What Acknowledge Does

The first step in managing a supervisory condition is to *acknowledge* the condition. Acknowledging a supervisory does two important things:

- It records the time and date at which you observed the presence of the condition and stores that information in the system’s historical log.
- When you press the acknowledge key, the system displays specific data on the location of the supervisory condition.

It is important to understand that the FACP can be configured with either *Global* or *Individual* Acknowledge. These options function as follows:

- **Global Acknowledge.** When global acknowledge is enabled, one press of the SUPV ACK key acknowledges *every* point currently reporting a supervisory condition.
- **Individual Acknowledge.** If individual acknowledge is enabled, the SUPV ACK key must be pressed to individually acknowledge each supervisory condition. Individual acknowledge must be selected if the panel is providing proprietary receiving service in accordance with NFPA72.

The SUPV ACK key, which is used to acknowledge supervisory conditions (either globally or individually), is located just beneath the “SUPERVISORY” LED. Refer to Figure 4-1. If the SUPV ACK key is passcode protected (by default, it is not), you cannot use this key to acknowledge supervisory conditions unless you have the required passcode.

Acknowledging Supervisory Conditions

Globally Acknowledging Supervisory Conditions

Pressing the SUPV ACK key once globally acknowledges all supervisory conditions that exist within the fire alarm system. In addition, the “SUPERVISORY“ LED changes from flashing to steady ON and the tone-alert silences.

If global acknowledge is enabled on your system, use the following procedure to acknowledge the supervisory conditions.

1. Unlock and open the enclosure door. The alphanumeric display shows the supervisory condition, similar to the following example.

```
**SUPERVISORY**      Press <ACK> to review  
FIRE = 0      PRI2 = 0      SUPV = 1      TRBL = 0
```

2. Press the SUPV ACK key under the flashing yellow LED. The alphanumeric display shows the area and type of condition. The tone-alert silences and the yellow LED glows steady.

```
REVERE BASEMENT NORTH WING      ROOM 31  
SPRINKLER MONITOR                ABNORMAL
```

Read the alphanumeric display. Investigate the problem to determine its cause. Restore or replace the defective device (switch, wire, notification appliance) in accordance with the manufacturer’s instructions, or call Simplex to repair the system. When the problem causing the supervisory is corrected, the supervisory automatically clears and, after a delay, the alphanumeric display indicates that the system status is normal.

Individually Acknowledging Supervisory Conditions

If individual acknowledge is enabled on your system, you need to separately acknowledge each supervisory condition. Use the following procedure to do this.

1. Unlock and open the enclosure door. The alphanumeric display shows the supervisory condition, similar to the following example.

```
**SUPERVISORY**      Press <ACK> to review  
FIRE = 0      PRI2 = 0      SUPV = 1      TRBL = 0
```

Acknowledging Supervisory Conditions, *Continued*

Individually Acknowledging Supervisory Conditions

2. Press the SUPV ACK key. Repeat this step and read the reports. The alphanumeric display shows the area and type of condition. The tone-alert silences and the yellow LED glows steady.
 - a. The tone-alert silences and the LED glows steady.
 - b. The display shows the area and type of problem, as shown below.

FIRST FLOOR EAST WING	ROOM 31
Press <ACK> key to acknowledge	

OR

FIRST FLOOR EAST WING	ROOM 31
FIRE PUMP MONITOR	RUNNING

3. Read the alphanumeric display. Investigate the problem to determine its cause. Restore or replace the defective device (switch, wire, notification appliance) in accordance with the manufacturer's instructions, or call Simplex to repair the system.

When the problem causing the condition is corrected, the SUPERVISORY LED flashes and the tone-alert sounds steady.

4. Press the SUPV ACK key. The display shows the system status.
 5. Press the SUPV ACK key again. After a short delay, the display indicates that the system is normal.
-

Chapter 5

Selecting Points for Status and Control

Introduction

Many of the advanced operations that can be accomplished from the operator interface first require you to select the point on which you want to perform the operation. Points can be selected in one of three ways.

- **Alarm, Trouble, Supervisory List.** Points that are reporting an alarm, trouble, or supervisory condition can be selected from the active alarm, trouble, or supervisory list.
- **Using the Menu.** The menu system includes an option that allows you to scroll through each category (monitor, signal, etc.) of point, and then after selecting a category, you can scroll through the points for the category.
- **Using the Entry Keys.** The Entry keys, located on the far right of the operator interface, contain abbreviated labels for each category of point. (For example, the key in the upper left corner of the Entry keys is labeled “ZONE” and the key to its right is labeled “SIG.” Pressing one of these keys causes the system to prompt you to select a specific point within the selected category.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Selecting Points from Alarm, Trouble, Supervisory List	26
Selecting Points from the Menu	27
Selecting Points with the Entry Keypad	28

Selecting Points from Alarm, Trouble, Supervisory List

Procedure

When a point experiences an abnormal condition, such as an alarm, trouble, or supervisory, it is added to the appropriate list (alarm list, supervisory list, or trouble list). Points within these lists can be selected as follows:

1. Press the appropriate acknowledge key to enter the list. (For example, press the FIRE ALARM ACK key to enter the list of current fire alarms; press the TROUBLE ACK key to enter the list of current troubles).
 2. Use the NEXT and PREV keys to scroll through the entries in this list. Stop scrolling when the point you are interested in is displayed.
-

Selecting Points from the Menu

Procedure

1. Press the MENU key to enter the panel's menu system.
2. Press the NEXT key until the alphanumeric display reads as follows:

```
Press <NEXT> or <PREVIOUS> to scroll  
Select a List of Points?
```

3. Press ENTER. The display reads as follows:

```
Press ENTER to select a list of points  
All Monitor Zones?
```

4. Press the NEXT key to scroll through the categories of points until the appropriate category is shown. Press the ENTER key. The first point in the selected category appears. In the example below, the point shown is the first one in the monitor zone category.

```
MONITOR CARD 1 ZONE NUMBER 1  
FIRE MONITOR ZONE NORMAL
```

5. Press the NEXT key to scroll through the list of points in the category. When the point that you want to select is displayed, press ENTER.
-

Selecting Points with the Entry Keypad

Overview

The Entry Keypad, shown below, allows you to quickly select a category of points. For example, pressing the ZONE key on the upper left side of the keypad selects the monitor zone category. After selecting a category, messages on the display prompt you for the specific point in the category.

You can use the keypad to select either a local point or a network point. A local point is one that is physically connected to the panel you are currently at, and a network point is one that is located on a different panel but has been programmed so that it can be selected and controlled from another panel.

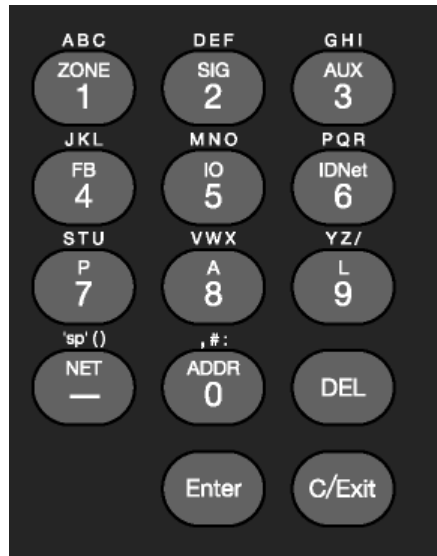


Figure 5–1. Entry Keypad

Selecting Points

Refer to the following table for information on using the keypad to select local points on this panel.

Table 5–1. Keypad Use

Key	Data to Enter
ZONE – allows you to select a Monitor Zone point.	<i>ZN</i> , followed by ENTER, where <i>ZN</i> represents a zone card and is a number from 1 to <i>n</i> . (<i>n</i> represents the number of the last zone card in your system.) After selecting a zone, use NEXT and PREV to scroll through the points.
SIG – allows you to select a Signal point.	<i>SIG</i> , followed by ENTER, where <i>SIG</i> represents a signal card and is number from 3 to <i>n</i> . (<i>n</i> represents the number of the last signal card in your system.) After selecting a signal card, use NEXT and PREV to scroll through the signal points. <i>SIG</i> , followed by ENTER, where <i>SIG</i> represents an IDNAC symbolic channel then "-" and the NXNA point number on that channel.

AUX – allows you to select an Auxiliary Relay	<i>AUX</i> , followed by ENTER, where <i>AUX</i> represents an auxiliary relay and is a number from 3 to <i>n</i> . (<i>n</i> represents the number of the last auxiliary relay in your system.)
FB – allows you to select a feedback point.	<i>FB</i> , followed by ENTER, where <i>FB</i> represents a feedback point and is a number from 3 to <i>n</i> . (<i>n</i> represents the number of the last feedback point in your system.)
IO – allows you to select a point on a 24 Point I/O card	<i>IO</i> , followed by ENTER, where <i>IO</i> represents a point and is a number from 1 to <i>n</i> . (<i>n</i> represents the number of the last I/O point in your system.)
IDNet – allows you to select an IDNet, MAPNET, or VESDA point.	<p><i>C-D</i>, followed by ENTER, where <i>C</i> represents the IDNet, MAPNET, or VESDA channel and <i>D</i> represents the device number. You must insert the dash between channel and device. Use the NET key to insert the dash.</p> <p>Notes:</p> <ul style="list-style-type: none"> • IDNet. Specify the channel with a number from 1 through 10. Use the number 0 to represent channel 10. Device numbers on each IDNet channel run from 1 to 250. • MAPNET. Specify the channel then the device. Device numbers on each MAPNET channel run from 1 to 127. • VESDA. Specify the channel then the device. Device numbers on each VESDA channel run from 1 to 127.
P / A / L – allows you to select a digital (P), analog (A), or List (L) pseudo point.	Enter the number corresponding to the digital pseudo, analog pseudo, or list point. For example, pressing the P key and entering a 1 selects the Alarm Silence Key pseudo point.
NET – allows you to select a network point.	Enter a network NODE number, followed by ENTER. The system then prompts for the type of point you want to select. Press the keypad key corresponding to the type of point (Zone, Signal, etc.) Use the descriptions above for information on selecting the specific point.
ADDR = sw address of the point in the system	Specify the address using the format <i>C-P-S</i> , where <i>C</i> is the card, <i>P</i> is the point, and <i>S</i> is the subpoint. You must insert the dash between the components of the address. Use the NET key to enter the dash.

Chapter 6

Advanced Functions

Introduction

This chapter describes advanced functions that you can perform from the operator interface panel.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Logging In and Out of the System	31
Setting System Time and Date	34
Viewing the Time at which an Event Occurred	35
Enabling and Disabling Points	36
Forcing Points On and Off	37
Displaying and Clearing Historical Logs	38
Printing Reports	39

Logging In and Out of the System

Introduction

The FACP system uses four access levels, referred to by the numbers one through four, to control what system operators can do with the system. The system typically operates at access level one, which allows an operator to accomplish basic tasks (for example, acknowledge alarm, trouble, and supervisory conditions) without logging in to the system.

Other functions – for example, the use of the user-defined function keys – are passcode protected to prevent access by unauthorized personnel.

Log In Procedure

Follow these steps to log in to the system at access level two, three, or four. The keypad used to enter the passcode is located behind the interface panel access door.

1. Obtain the passcode for the access level at which you want to operate.
2. Press the <MENU> key on the Display/Action keypad, located on the right side of the interface panel. The alphanumeric display shows the following message.

```
Press <NEXT> or <PREVIOUS> to scroll  
Change Access Level?
```

3. Press the <ENTER> key on the Display/Action keypad. The following message displays.

```
1 = Login    2 = Logout  
CURRENT ACCESS LEVEL = 1
```

4. Press the 1 key on the Display/Action keypad. The display shows the following message.

```
Enter a Passcode followed by <ENTER>
```

5. Enter the passcode for the access level. The passcode can be up to 10 numbers in length. Press the <ENTER> key on the Display/Action keypad when you have finished entering the code. An X is displayed for each digit of your passcode, as shown below.

```
Enter a Passcode followed by <ENTER>  
XXX
```

Logging In and Out of the System, *Continued*

Log In Procedure

If the passcode entered in Step 5 is correct, the following message is shown.

```
Enter a Passcode followed by <ENTER>
ACCESS GRANTED
```

After a brief pause, the system displays the granted access level, such as the level 2 message shown below.

```
1 = Login    2 = Logout
CURRENT ACCESS LEVEL = 2
```

Press the <CLR> key twice. The display shows the system status, as shown below.

```
1 = Login    2 = Logout
CURRENT ACCESS LEVEL = 2
```

Log Out Procedure

Failure to log out allows unauthorized personnel access to the various passcode protected functions. If no keypad activity is detected for ten minutes, the system returns to Level 1 access.

Perform the following procedure to log out and return the operator access level to Level 1.

1. Press the <MENU> key. The following message is displayed.

```
Press <NEXT> or <PREVIOUS> to scroll
Change Access Level?
```

2. Press the <ENTER> key. The following message is displayed.

```
1 = Login    2 = Logout
CURRENT ACCESS LEVEL = 2
```

Logging In and Out of the System, *Continued*

Log Out Procedure

3. Press the <F2> key. After a brief pause, the display shows a message similar to the one below.

```
1 = Login    2 = Logout  
CURRENT ACCESS REDUCED TO LEVEL 1
```

4. Press the **C/Exit** key to exit. The display shows the system status.
-

Setting System Time and Date

Procedure

Follow these steps to set the time and date used by the FACP. Ensuring that the current time and date are correct on the system is important. In particular, the accuracy of historical logs and reports depends on the system time

1. Press the MENU key. Press the NEXT or PREVIOUS key until the display shows the option for setting time and date.

```
Press <Next> or <Previous> to Scroll  
Set Time and Date?
```

2. Press the ENTER key. The system responds as follows:

```
Press <INFO> to Change Time and Date  
12:44:12 am          WED 01-JAN-00
```

3. Press the MORE INFO key. The display shows the time and date and places an underline character under the hour, meaning it is the part of the time and date that can be changed.

```
12:44:12 am          WED 01-JAN-00
```

4. Set the time and date as follows:
 - **Time.** Use the < and > keys to move the underline character between hours and minutes. Use the NEXT and PREVIOUS keys to increment or decrement the value. For example, to change the minutes, first use the < and > keys to move the highlight under the minutes field. Then use the NEXT and PREVIOUS keys to change the value of the minutes field.
 - **Date.** Use the < and > keys to move the underline character between the components of the date field. Use the NEXT and PREVIOUS keys to increment or decrement the value of the field until it is correct.
 5. When the date and time are correct, press the ENTER key.
-

Viewing the Time at which an Event Occurred

Overview

The system records the time at which each alarm, trouble, and supervisory event occurs. You can view this information in one of two ways:

- By displaying or printing the historical alarm or trouble log. Refer to “Displaying Historical Logs” later in this chapter for information on doing this.
- By scrolling through the list of active alarm, trouble, or supervisory conditions, selecting a specific event, and using the EVENT TIME key. Refer to the procedure below for information on doing this.

Procedure

1. Select the alarm, trouble, or supervisory event whose event time you want to display. To do this, follow these steps.
 - a. Press the FIRE ALARM ACK, PRIORITY 2 ACK, TROUBLE ACK, or SUPERVISORY ACK key to enter the appropriate list of events. (For example, press the FIRE ALARM ACK key to enter the list of active fire alarms.)
 - b. Use the NEXT and PREVIOUS keys to scroll through the list until the alarm in which you are interested is displayed.
 - c. Press the EVENT TIME key. The time at which the alarm, priority 2 alarm, trouble, or supervisory occurred appears in the display.
-

Enabling and Disabling Points

Overview

Enabling and disabling points is sometimes necessary when performing maintenance on the system. When using this function, it is critical that you understand whether Custom Control (either the system's default Custom Control or any user Custom Control) makes reference to the point or not. Actions driven by custom control are suspended for the duration of time the point is disabled, but execute immediately after the point is enabled.

Example. Suppose you disable a signal point and during the time the point is disabled, a Custom Control equation executes that turns the point ON. This action is suspended for the duration of time the point is disabled. However, when the point is subsequently enabled, the point's state updates and the Custom Control equation turning the point ON executes, turning the signal ON.

Procedure

Follow these steps to enable or disable a point.

1. Select the point. Refer to Chapter 5 for information on selecting points.
2. Press the DISABLE or ENABLE key.
3. Press the ENTER key to carry out the action.

The system generates a "Disable Trouble" to remind you that the point is disabled. When you enable the point again, the trouble clears.

Forcing Points On and Off

Overview

Forcing control points ON and OFF allows a precise degree of manual system control. For example, you can force a relay or signal point ON to test or execute its function. Unlike ENABLE/DISABLE (see description in previous section), a point that you force OFF does not refresh its state when the point is turned back ON.

Example. Suppose you turn a signal point OFF and during the time the point is disabled, a Custom Control equation executes that turns the point ON. When the point is subsequently returned to automatic operation, the point's state does not update and the Custom Control equation turning the point ON does not execute.

Forcing Points ON and OFF

Follow these steps to force a point ON or OFF.

1. Select the point. Refer to Chapter 5 for information on selecting points.
2. Press the ON or OFF key.
3. Press the ENTER key to carry out the action.

The system generates a "Manual Override Trouble" for the point to remind you that the point has been forced ON or OFF.

Returning a Point to Automatic Operation

Automatic operation is the normal operation of the point. For example, if the point is a signal point, a setting of AUTOMATIC indicates that the signal is under the control of the job executing on the panel.

To return the state of a point that is currently ON or OFF to AUTOMATIC, follow these steps.

1. Select the point. Refer to Chapter 5 for information on selecting points.
2. Press the AUTOMATIC key.
3. Press the ENTER key to carry out the action.

The system clears the "Manual Override Trouble."

Displaying and Clearing Historical Logs

Overview

Historical logs provide a record of both the events that have occurred on the system and the actions taken by an operator to manage those events. The system contains the following logs.

- Historical Alarm Log. Provides detailed information on each alarm, including time and date stamp, that has occurred since the last time the logs were cleared.
- Historical Trouble Log. Provides detailed information on each trouble, including time and date stamp, that has occurred since the last time the logs were cleared.

Displaying/Clearing Historical Logs

1. Press the MENU key. Use the NEXT and PREVIOUS keys to scroll through the choices until the “DISPLAY HISTORICAL ALARM LOG” or “DISPLAY HISTORICAL TROUBLE LOG” choice is displayed.
 2. Press ENTER to enter the log file.
 3. Use the NEXT and PREVIOUS keys to scroll through the entries in the selected log.
-

Generating Reports

Overview

The system can generate any of the following reports.

Table 6–1. Reports

Report	Description
Alarm History Log Report	Report includes all information contained in the alarm history log – device number, custom label, time and date device entered alarm.
Trouble History Log Report	Report includes all information contained in the trouble history log – device number, custom label, type of trouble, time and date device experienced trouble.
TrueAlarm Status Report	Reports the following information for each point. <ul style="list-style-type: none"> • Device Number. • Custom Label. • Current Sensitivity of the Point. • Point Status: Normal, Trouble, Alarm. • Almost Dirty Status: Points which are almost dirty have an asterisk in this field to denote this.
TrueAlarm Service Report	Reports the following information for each point. <ul style="list-style-type: none"> • Device Number. • Custom Label. • Alarm Level (sensitivity level of the device). • Average Value. • Current Value. • Percent of Alarm: Shows the current value for the sensor. Value is shown as a percentage of 100 percent (alarm). For example, if the value shown is 9%, it means that the sensor is currently at 9% of the value required to trigger an alarm. • Peak Value. Shows the highest value that the sensor has reached. Value is shown as a percentage of 100 percent (alarm). For example, if the value shown is 9%, it means that the peak value experienced by the sensor was 9% of the value required to trigger an alarm. • Current State: Possible values include Normal, Trouble, Dirty, Excessively Dirty, and Almost Dirty.
TrueAlert Device Report	Report the following information for each TrueAlert device. <ul style="list-style-type: none"> • Point ID. • Custom Label. • Device Type. • Candela.

Generating Reports, *Continued*

Overview

Table 6-1. Reports *(continued)*

Report	Description
TrueAlert Status Report	<p>This report can be created after the TrueNAC Voltage Drop Test (see Chapter 7) is run. It reports the following information for each Multi Candela TrueAlert Device.</p> <ul style="list-style-type: none"> • Point ID. • Custom Label. • Pass/Fail. <p>Report the following information for each SLC:</p> <ul style="list-style-type: none"> • Nominal Current (A) - The current draw on the TrueAlert circuit when the test was run. • Worst Case Current (A) - The current draw on the SLC under worst case operating conditions. • Worst Case voltage Above/Below threshold (V).
TrueAlarm CO Report	<p>This report provides the following information regarding the CO devices:</p> <ul style="list-style-type: none"> • Device Number (on the network). • Custom Label (custom description of device). • Current Device Value (PPM). • End-of-Life Date. • Device Status (Normal, Trouble).
Install Mode List Report	<p>This report provides the following information regarding the Install Mode list:</p> <ul style="list-style-type: none"> • Point ID. • Custom Label. • Device Status.
Alarm Verification Tally Report	<p>This report provides the following information for each device supporting alarm verification:</p> <ul style="list-style-type: none"> • Device Number. • Custom Label. • Device Type. • Point Type. • Tally Count.
TrueAlert ES Self-Test Report	<p>This report provides the following information for devices that support Self-Test:</p> <ul style="list-style-type: none"> • Point ID. • Custom label. • Test date. • Self-Test result.
TrueAlert ES Speaker Tap Report	<p>This report provides the following information for NXNA speaker devices:</p> <ul style="list-style-type: none"> • Point ID. • Custom label. • Device type. • Speaker tap position.

Adv Earth Fault Diag Report	This report provides the following information for Advanced Earth Fault Detection (AEFD): <ul style="list-style-type: none">• Date and time of the test.• Address of the card that was tested.• Description of the card that was tested.• Circuit tested.• Type of test; All Circuits ON/OFF or a single circuit.• Quality of Ground Fault Isolation.• Measured impedance.• Polarity.
-----------------------------	--

Procedure

To generate a report, complete the following steps:

1. Press the MENU key. Use the NEXT and PREVIOUS keys to scroll through the choices until the “PRINT REPORTS?” choice is displayed.
2. Use the NEXT and PREVIOUS keys to scroll through the categories of report (Alarm History, Trouble History, etc.).
3. When the category of report you want to print is displayed, press ENTER. The system prompts you to confirm that you want to generate the report. Press ENTER again.

The report prints on the panel’s report printer.

Chapter 7

Install Mode

Introduction

The **Install Mode** is a 4100ES feature that allows the user to minimize the amount of Troubles that occur when the system is being installed or when it is undergoing extensive service.

Install Mode allows the technician to select device points and cards that might raise Troubles due to installation issues and place them in “Install Mode”. Install Mode will only raise one Trouble “INSTALL MODE ACTIVE”, regardless of the number of items in it.

Install mode is available on Panels programmed with a revision 1.01 of the ES Programmer or later.

In this Chapter

This chapter covers the following topic.

Topic	See Page #
Accessing Install Mode	43
Adding and Removing Items To and From Install Mode	44
Adding and Removing Points and Cards	44
Adding and Removing Lists	45
Adding and removing groups to Install Mode	45
Viewing Install Mode	46

Accessing Install Mode

Accessing Install Mode

Install mode is accessed directly from the user interface.

To access Install Mode:

1. Power-up the panel
2. Log into the FACP at a level3 or higher.

Once logged in, you can move and remove points, cards, lists and groups to and from Install Mode.

Adding and Removing Items To and From Install Mode

Adding and Removing Points and Cards

Moving a point or a card to Install Mode:

IMPORTANT: A Card in the Install Mode List no longer reports Card Faults. For example, a Power Supply in Install Mode does not report AC Failures, Depleted/Missing Batteries, or Ground Faults.

1. Press on the button that represents the point type you want to add to Install Mode. For example, press on the **6** button to access IDNet points.
2. Enter the Name or Address of the item you want to add.
3. Press **Enter**
4. Once the Item appears on the display, press the **More Info** button.
5. Use the arrows to find and select “Add this Point/Card to Install Mode?”.
6. Press **Enter** to confirm the selection and move the item to Install mode.

Removing a point or a card to Install Mode:

1. Press on the button that represents the point type you want to move to Install Mode.
2. Enter the Name or Address of the item you want to move.
3. Press **Enter**
4. Once the Item appears on the display, press the **More Info** button.
5. Use the arrows to find and select “Remove Point/Card from Install Mode?”.
6. Press **Enter** to confirm the selection and remove the point/card from Install Mode.

Depending upon the state of the point being removed (normal or alarm, respectively), one of the following screens is displayed:

```
Please stand by...
M1-6   Will Enable in 60 seconds
```

Or

```
**WARNING** Press <Disable> to abort
M1-6 will Alarm in 60 seconds
```

IMPORTANT: An Alarm could be reported after removing a List or a Card from the Install Mode List (without warning).

Adding and Removing Items To and From Install Mode , *Continued*

Adding and Removing Lists

Adding and Removing Lists from Install Mode:

Note: For information on making lists refer to the *ES Panel Programmer's Manual (574-849)*.

1. Press on the **9** button to access the lists.
2. Enter the Number of the list you want to move.
3. Press **Enter**
4. Once the Item appears on the display:
 - Press **1** to move the List to Install Mode
 - Press **2** to remove the List from Install Mode.

Once the action has been confirmed the following screen will appear.

```
Please stand by...
M1-6      Will Enable in 60 seconds
```

IMPORTANT: An Alarm could be reported after removing a List or a Card from the Install Mode List (without warning).

Adding and removing groups to Install Mode

Adding a group of points that raise the same Trouble to Install mode:

1. Press on the **Menu** button.
2. Use the Arrows to Scroll to the Diagnostic Function option.
3. Press **Enter**.
4. From that menu, use the arrows to scroll down to the “View/Change Install Mode List” option.
5. Press **Enter**.
6. From “View Change Install Mode List” use the arrows to scroll down and select the group of Troubles you want moved to Install Mode. For Example:

```
Move NO ANSWER devices to Install mode?
```

7. Select the group and press **Enter** to add them to Install Mode.

Removing a group of points from Install Mode:

1. Press on the **Menu** button.
2. Use the Arrows to Scroll to the Diagnostic Function option.
3. Press **Enter**.
4. From that menu, use the arrows to scroll down to the “View/Change Install Mode List” option.
5. Press **Enter**.
6. From “View Change Install Mode List” use the arrows to scroll down and select either:
 - “Remove ALL NORMAL pts from Install Mode”
 - “Remove ALL POINTS from Install Mode”. Choosing this option makes the following screen appear:

```
Please stand by...
M1-6      Will Enable in 60 seconds
```

IMPORTANT: Active Alarms can initiate without warning after the 60 second countdown

Viewing Install Mode

Viewing Install Mode

To view Install Mode:

1. Press the **Menu** button.
 2. Use the Arrows to Scroll to the Diagnostic Function option.
 3. Press **Enter**.
 4. From that menu, use the arrows to scroll down to the “View/Change Install Mode List” option.
 5. Press **Enter**.
 6. From “View Change Install Mode List” use the arrows to scroll down and select “View the Install Mode List”
 7. Press **Enter** to Display the List of items in Install Mode
-

Chapter 8

System Test Procedures

Introduction

This section describes performing the system tests that can be performed from the front panel of the FACP.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
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Setting WalkTest Options	50
TrueNAC Voltage Drop Test	51
Disable IDNET CO Algorithms	57
TrueAlert ES Appliance Self-Test	59
Advanced Earth Fault Diagnostic (AEFD)	66

Lamp Test / Tone Alert Test

Overview

The LAMP TEST key on the operator interface panel is used to determine local lamp failures within the system. Lamps on the operator interface panel illuminate along with the five function and acknowledge LEDs.

The tone-alert (buzzer) can also be tested with the LAMP TEST.

Performing a Lamp Test

Do the following procedures to test for lamp failures.

1. Press the “LAMP TEST” push-button. All LEDs should illuminate (lamps should stay illuminated as long as the key is depressed).
 2. If you find defective lamps/LEDs, contact your local Simplex branch office.
-

Testing the Tone-Alert

Holding the Lamp Test key for more than 3 seconds tests the tone-alert.

Walk Test™ Overview

Overview

WalkTest allows the function of the system's initiating devices and signals to be tested by a single person. Conducting a WalkTest requires you to perform the following steps.

- **Step 1. Create WalkTest Groups.** The FACP supports up to eight Walk Test™ groups. This allows the building to be divided into small portions for the Walk Test™, and allows the rest of the building to be protected by the fire alarm panel. Each group has a list of monitor points (initiating devices) and a list of the signal circuits that activate when one of the group's control points activates.

Refer to Chapter 9 of the *ES Panel Programmer's Manual* (574-849) for information on adding monitor points (initiating devices) and signals/relays to a WalkTest group.

- **Step 2. Enable WalkTest Options from Front Panel.** These options include the following. Refer to the "Setting WalkTest Options" later in this section for information on setting these options.
 - Which WalkTest Group is enabled.
 - Whether the group's signals turn on when a monitor point in the same group activates. Turn this option on (along with the WalkTest logging option) to perform a silent WalkTest on the system.
 - Whether logging of WalkTest information is enabled or not. (Enable this option to perform a silent WalkTest.)

Step 3. Manually Activate Initiating Devices in Each Group and Interpret Signals.

Individually activate each initiating device in the group, using a magnet or canned smoke. Make sure to proceed in a logical manner (i.e., start with the lowest IDNet or MAPNET address and work toward the highest). Each time you activate an initiating device, the system's signals pulse a code that allows you to verify exactly which initiating device triggered the signals. For hardwired monitor zones, the signal code corresponds to the number of the zone. (For example, if the zone number is eight, the signals pulse eight times to indicate zone eight.) For IDNet and MAPNET devices, the first set of pulses from the signals correspond to the channel. The signals then pauses momentarily and the second set of pulses correspond to the number of the device on the channel. For example, if you activate an IDNet smoke detector with an address of M1-25, the signals would sound once to indicate channel one, pause for a short duration, and then sound 2 times pause, and then sound 5 times to indicate device 25.

In some cases, immediately after verifying the function of an initiating device, you may also want to verify its ability to generate a trouble condition. To do this, cause a trouble on the device (i.e., remove the sensor from a TrueAlarm device), and then listen to the signals. The signals sound steady for 4 seconds to indicate trouble conditions, and then reset.

Important Notes

Signals and initiating devices (with the exception of pull stations) automatically acknowledge and automatically reset, allowing for one-man testing without the need for someone at the main control panel to acknowledge and reset the system each time an initiating device and its associated signals activate.

A silent Walk Test™ may be performed (no signals will sound) and logging of events may be selected. Refer to "Setting WalkTest Options" below for additional information.

If an alarm condition is detected from a zone that is not in the present active Walk Test™ group, the system will operate as a fire alarm panel and the active Walk Test™ groups are aborted.

Setting WalkTest Options

Enabling WalkTest for a Group

1. Press the MENU key and then use the NEXT and PREV keys until “ENABLE WALKTEST?” is displayed. Press ENTER.
2. Use the NEXT and PREVIOUS keys to scroll through the WalkTest groups until the group that you want to test is displayed. Press ENTER. A screen similar to the following appears.

```

1 = on-->OFF    2 = no-->LOG    3 = ?->ZONE    4 = no-->SIG
  
```

Setting Options

Each of the options shown in the example above is associated with a number from one to four. Pressing the associated number on the keypad toggles the setting of the option. The arrow points to choice currently enabled for the option.

Example. The first option shown above (**1 = on --> OFF**) allows you to turn WalkTest on and off for the group you selected in Step 2 above. In the example, the arrow points to OFF, indicating that WalkTest is not currently on for the selected group. To turn it on, you would press the number 1 on the keypad. When you do this, the arrow turns around to indicate that ON is selected and the option reads **1 = ON <-- off**.

The options are as follows

Table 8–1. WalkTest Options

Option	Description
1 = on --> OFF	Turns WalkTest on and off for the selected group. Press 1 on the keypad to toggle the setting of the option.
2 = no --> LOG	Allows you to enable or disable logging. If the arrow points to LOG, logging is enabled. If the arrow points to NO, logging is disabled. Press 2 on the keypad to toggle the setting of this option.
3 = ? --> ZONE	When ZONE is selected, the signals play a code that indicates the activated initiating device’s address. (For hardwired zones, the signals sound the number of the zone. For IDNet and MAPNET, the code has two parts, separated by a pause. The first part indicates the channel and the second part indicates the device number. When ? is selected, the signals play 2 ¼ second pulses. Press 3 on the keypad to toggle the setting of this option.
4 = no --> SIG	Allows you to configure a silent WalkTest (i.e., no signals are used). Make sure to enable the logging of Walk Test™ events, which allows each zone with an abnormal condition to be time tagged and added to the log. See previous option above. When SIG is selected, signals sound during the WalkTest. When NO is selected, no signals are used during the WalkTest.

TrueNAC Voltage Drop Test

Overview

The TrueNAC Voltage Drop Test is used in conjunction with the TrueNAC Circuit Design tool. A job is first designed using the TrueNAC Circuit Design tool. The tool provides a report with job layout and device voltages. After the job is installed, the TrueNAC Voltage Drop Test is run to verify proper installation of the 4906 devices.

The TrueNAC Voltage Drop Test determines the line voltage for notification appliances that are connected to a TrueAlert Power Supply's (TPS) Signaling Line Circuit (SLC) channels, under worst case panel operating conditions. It differs from simply checking with a meter, in that the voltage output of the panel under nominal operating conditions is typically higher than the voltage output under worst case conditions (e.g. on end-of-life batteries). Prior to the start of the test, the horn volume is selected to be either "ON" (horns set to high volume) or "OFF" (silent testing of the system).

The TrueNAC Voltage Drop Test is compatible only with the 4906 series TrueAlert devices connected to a TrueAlert Power Supply (TPS). The test can be run on a single TrueAlert SLC, or on all the TPS's in the system.

- If older "fixed" candela devices are present, the tool will indicate incompatible devices and will not run. This will also be indicated in the report
- TPS PCA's Revision E and older may be updated with the latest slave code to run the TrueNAC Voltage Drop Test. The results will be less accurate than with Revision F or later TPS's. The reports will also indicate the use of an older TPS and caution that results are less accurate.
- If older TPS slave code (1.04 and earlier) is installed on a newer TPS PCA (Revision F or later), a "HW CONFIG/SW REV MISMATCH TROUBLE" trouble will be indicated on the FACP.

The TrueNAC Voltage Drop Test performs the following diagnostic verification:

- Devices are polled and report terminal voltage, candela rating, and device type to the FACP.
- The line impedance of the SLC channel is determined through the TrueNAC algorithm.
- Notification Appliances that fall below the device threshold are reported as failed devices to the FACP, and the panel indicates TrueNAC Voltage Drop Test failed trouble.

Devices that have failed the TrueNAC Voltage Drop Test require the following actions:

- Fix the device with the lowest voltage as indicated in the TrueNAC status report.
- Repeat the TrueNAC Voltage Drop Test.

The FACP keeps track of the devices that failed the TrueNAC Voltage Drop test. A trouble alarm is indicated on the panel for devices that failed the test. This trouble is cleared after hardware reset. The TrueNAC Voltage Drop Test must be repeated to verify that all troubles are fixed.

Accessing the TrueNAC Voltage Drop Test

To gain access to the TrueNAC Voltage Drop diagnostic test, you must login with an access level higher than level one (Refer to Chapter 6 for access level discussion).

1. Press the <MENU> key on the Display/Action keypad, located on the right side of the interface panel. The alphanumeric display shows the following message.

Press <NEXT> or <PREVIOUS> to scroll
Change Access Level?

TrueNAC Voltage Drop Test, *Continued*

Accessing the TrueNAC Voltage Drop Test

2. Press the <NEXT> key on the Display/Action keypad. Use the <NEXT> and <PREVIOUS> keys to scroll to the **Diagnostic Functions**. The following message displays.

```
Press <NEXT> or <PREVIOUS> to scroll  
Diagnostic Functions?
```

3. Press the <ENTER> key on the Display/Action keypad. Scroll to the TrueNAC Voltage Drop Test using the <NEXT> and <PREVIOUS> keys on the Display/Action keypad. The following message displays.

```
Press <NEXT> or <PREVIOUS> to scroll  
TrueAlert TrueNAC Test?
```

4. Press the <ENTER> key on the Display/Action keypad. The following message displays.

```
ALL TPS SLCs  
<ENTER>=Enable TrueNAC Test
```

Testing all TrueAlert Power Supply's SLCs

Use the following procedure to test all the TrueAlert Power Supply's SLC lines at once. Before you start this test, make sure you have already completed the procedure *Accessing the TrueNac Voltage Drop Test*.

1. Press the <ENTER> key on the Display/Action keypad. The following message displays.

```
ALL TPS SLCs  
<ENTER>=HORN ON
```

2. To turn the horn on or off before performing the TrueNAC Voltage Drop Test, use the <NEXT> and <PREVIOUS> keys to set the horn state.

Note: The horn can be turned off to prevent any disturbance during the TrueNAC Voltage Drop Test. Horns that are turned on are set to high volume. If Horns are on, the panel will perform two passes one with horns on and one with horns off. This is done to enhance measurement accuracy with AV's.

Continued on next page

TrueNAC Voltage Drop Test, *Continued*

Testing all TrueAlert Power Supply's SLCs

3. Press the <ENTER> key on the Display/Action keypad. If the test is successful, the following message displays.

```
ALL TPS SLCs
TrueAlert TEST COMPLETED
```

Testing each TrueAlert Power Supply's SLC

Use the following procedure to test separately each of the TrueAlert Power Supply's SLC lines. Before you start this test, make sure you have already completed the procedure *Accessing the TrueNAC Voltage Drop Test*.

1. Press the <NEXT> key on the Display/Action keypad. The following message displays.

```
CARD X, TRUEALERT POWER SUPPLY
<ENTER>=Select Channel
```

2. Press the <ENTER> key on the Display/Action keypad. The following message displays.

```
TPS CARD: X Channel: X
<ENTER>=Enable TrueNAC Test
```

3. Use the <NEXT> and <PREVIOUS> keys on the Display/Action keypad to change the SLC channel.
4. Press the <ENTER> key on the Display/Action keypad. The following message displays.

```
TPS CARD: X Channel: X
<ENTER>=HORN ON
```

5. To turn the horn on or off before performing the TrueNAC Voltage Drop Test, use the <NEXT> and <PREVIOUS> keys to set the horn state.

Note: The horn can be turned off to prevent any disturbance during the TrueNAC Voltage Drop Test. Horns that are turned on are set to high volume. If Horns are on, the panel will perform two passes one with horns on and one with horns off. This is done to enhance measurement accuracy with A/V's.

Continued on next page

TrueNAC Voltage Drop Test, *Continued*

Testing each TrueAlert Power Supply's SLC

6. Press the <ENTER> key on the Display/Action keypad. If the test is successful, the following message displays.

```
TPS CARD: X Channel: X
TrueNAC TEST COMPLETED
```

The TrueNAC Report

A TrueNAC status report can be generated by the panel with the completion of the TrueNAC Voltage Drop Test.

Sample reports are shown below.

TrueNAC Report Samples

Example of a successful single-channel test:

```
-----
Service Port                                     Page 1
Report 6: TrueAlert Device Status Report 10:23:45am WED 07-FEB-07
-----

TPS    3
SLC    1

POINT ID  CUSTOM LABEL                                TEST RESULT
-----
3-1-1    Cafeteria East                                PASSED
3-1-2    Cafeteria West                                PASSED
3-1-3    Main Lobby                                    PASSED
3-1-4    Library East                                  PASSED
3-1-5    Library West                                  PASSED

NOMINAL CURRENT (A):                               1.34
WORST_CASE CURRENT (A):                             1.97
WORST_CASE VOLTAGE ABOVE/BELOW THRESHOLD (V):       0.9

SLC HAS NOT PASSED UNLESS ALL DEVICES ARE MARKED AS PASSED
-----
```

Continued on next page

TrueNAC Voltage Drop Test, *Continued*

TrueNAC Report Samples

Example of a failed single-channel test:

Service Port Page 1
Report 6: TrueAlert Device Status Report 10:23:45am WED 07-FEB-07

TPS 3
SLC 1

POINT ID	CUSTOM LABEL	TEST RESULT	
3-1-1	Cafeteria East	PASSED	
3-1-2	Cafeteria West	PASSED	
3-1-3	Main Lobby	PASSED	
3-1-4	Library East	PASSED	
3-1-5	Library West	FAILED	-0.4
3-1-6	Electrical West	FAILED	-0.6

NOMINAL CURRENT (A): 1.34
WORST_CASE CURRENT (A): 1.97
WORST_CASE VOLTAGE ABOVE/BELOW THRESHOLD (V): -0.6

SLC HAS NOT PASSED UNLESS ALL DEVICES ARE MARKED AS PASSED

Example of a successful test with an old HW version for TPS 3:

Service Port Page 1
Report 6: TrueAlert Device Status Report 10:23:45am WED 07-FEB-07

TPS 3
SLC 1

POINT ID	CUSTOM LABEL	TEST RESULT
3-1-1	Cafeteria East	PASSED
3-1-2	Cafeteria West	PASSED
3-1-3	Main Lobby	PASSED
3-1-4	Library East	PASSED
3-1-5	Library West	PASSED

NOMINAL CURRENT (A): 1.34
WORST_CASE CURRENT (A): 1.97
WORST_CASE VOLTAGE ABOVE/BELOW THRESHOLD (V): 0.8

WARNING: OLD VERSION OF TPS HARDWARE USED, RESULTS MAY HAVE
GREATER VARIATIONS THAN EXPECTED

SLC HAS NOT PASSED UNLESS ALL DEVICES ARE MARKED AS PASSED

Continued on next page

TrueNAC Voltage Drop Test, *Continued*

TrueNAC Report Samples

Example of an aborted (incompatible device problem) test

Service Port Page 1
Report 6: TrueAlert Device Status Report 10:23:45am WED 07-FEB-07

TPS 3
SLC 1

POINT ID	CUSTOM LABEL	TEST RESULT
3-1-1	Auditorium North	PASSED
3-1-2	Auditorium South	PASSED
3-1-3	Auditorium Lobby	DEVICE NOT COMPATIBLE

NOMINAL CURRENT (A): 0.80
WORST_CASE CURRENT (A): 1.17
WORST_CASE VOLTAGE ABOVE/BELOW THRESHOLD (V): 1.2

SLC HAS NOT PASSED UNLESS ALL DEVICES ARE MARKED AS PASSED

Disable IDNET CO Algorithms

Overview

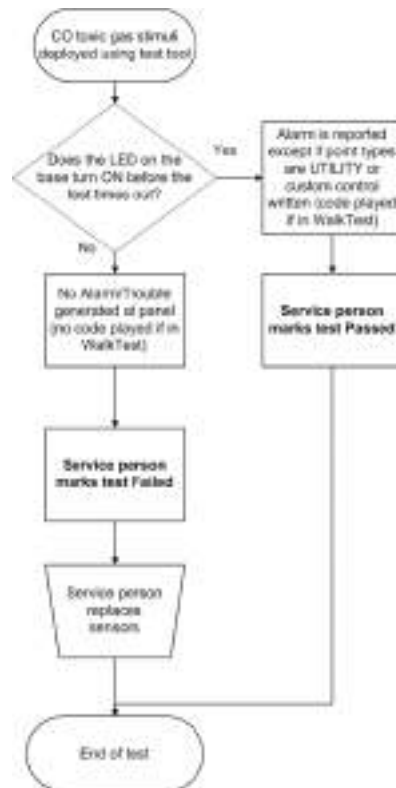
The Disable IDNET CO Algorithms is one of the options available under the Diagnostics menu, at the front panel of the FACP. When choosing this option, the technician ensures that the CO sensors will get a testing threshold downloaded and the CO over time is disabled. With the Disable IDNET CO Algorithms option on, the technician can then proceed to test the devices with the WalkTest option Enabled or Disabled. When the Disable IDNET CO Algorithms is entered, a trouble will be generated. The trouble screen that will appear will look as follows:

IDNET CO ALGORITHMS DISABLED (TROUBLE)
TROUBLE POINT ABNORMAL

Since all three possible sensors (photo, heat and CO) could be tested simultaneously, the LED on the base will be used to give the technician an indication of the test result. The LED states and their meanings are as follows:

- LED OFF - No sensors have passed the test
- LED ON - At least one sensor has passed the test (If testing only one sensor this is the LED state you'd expect if the test passed).
- LED FLASHING - All sensors for this device have passed the test (Note: This could be 2 or 3 sensors depending on what type of CO combination device is configured. This state will not be seen if only a single sensor is being tested)

Because the sensors can either be tested one at a time or by combining multiple technologies into a single test, one can follow two similar approaches to complete the tests. Figures 8-1 and 8-2 show the two flowcharts denoting those approaches.

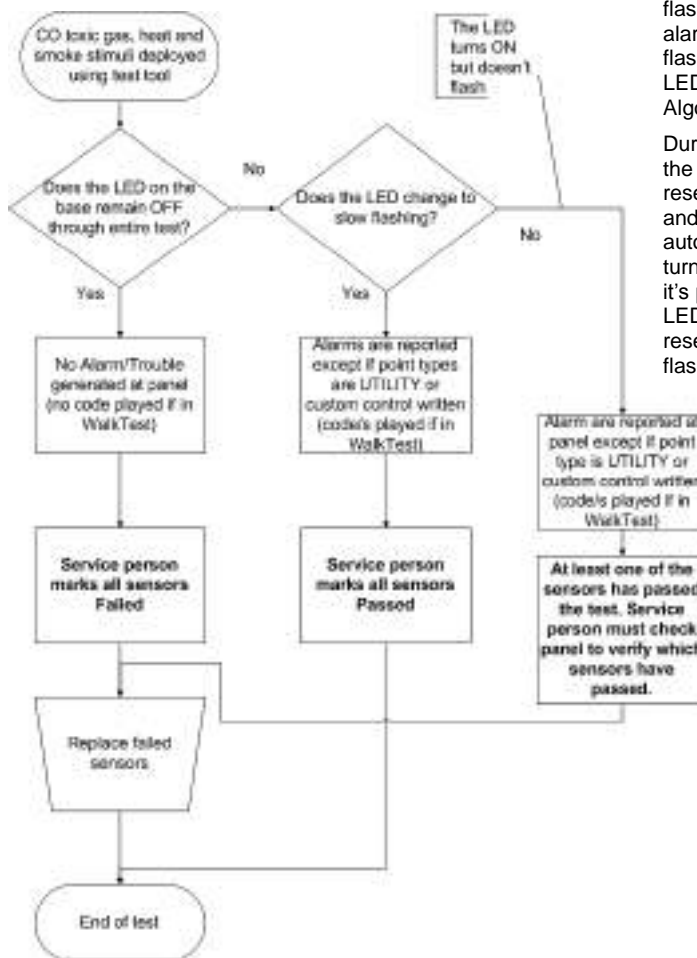


NOTE: The following describes the LED states
 LED OFF – The sensor has not exceeded its threshold
 LED ON – Sensor has exceeded its threshold
 LED FLASHING – This state will not be seen when only a single sensor is being tested

Figure 8-1. Testing a Single CO Sensor

Continued on next page

Disable IDNET CO Algorithms, *Continued*



NOTE: The LED on the base may turn ON prior to flashing depending on when the individual sensors alarm. Only the last LED requested to flash will flash. All others will turn steady ON. Flashing of the LED will only be performed when in IDNET CO Algorithms are Disabled.

During WalkTest, a reset timer is activated so that the LED is reset to the OFF state without needing a reset at the panel. The reset is user programmable and can be as short as 15 seconds long. This automatic reset may cause the LED on the base to turn OFF before the test is complete. For example, it's possible that depending on the test tool, the LED (if all sensors are good) could turn ON then reset to OFF, turn ON then reset to OFF then finally flash then reset to OFF.

NOTE: The following describes the LED states:

LED OFF – No sensors have exceeded their threshold

LED ON – At least one sensor exceeded its threshold

LED FLASHING – All sensors for this device have exceeded their thresholds (**Note:** This could be 2 or 3 sensors depending on what type of CO combination device is configured)

Flashing will only be performed when in IDNET CO Algorithms are Disabled

Figure 8-2. Simultaneous Testing of Multiple Sensor Technologies

Disable IDNET CO Algorithms without WalkTest Enabled

With the WalkTest option disabled, the devices will bring in actual alarms at the panel unless specific custom control is written to prevent this.

Disable IDNET CO Algorithms with WalkTest Enabled

With the WalkTest option enabled, the devices won't go into alarm at the panel. Instead the device that went over threshold will be coded out and a print message will be generated to show that it passed a functional test.

TrueAlert ES Appliance Self-Test

Self-Test Overview

When a Self-Test is run on a TrueAlert Zone, the TrueAlert ES appliances in that zone test their notification components (strobe, horn or speaker) and report their results to the panel.

The TrueAlert ES appliance Self-Test feature is available for 4100ES FACPs revision 2.02 or higher. This feature is compatible with all TrueAlert ES notification appliances.

Note: Legacy TrueAlert notifications appliances found in the tested zones will be diagnosed as “unsupported”, they will not trigger a system trouble.

Self-Test Menus and Options Overview

To launch the Self-Test, the user must navigate to the Diagnostic Menu and access the TrueAlert Test menu. Figure 8-3 depicts the menu options and directories found under the TrueAlert ES Self-Test option.

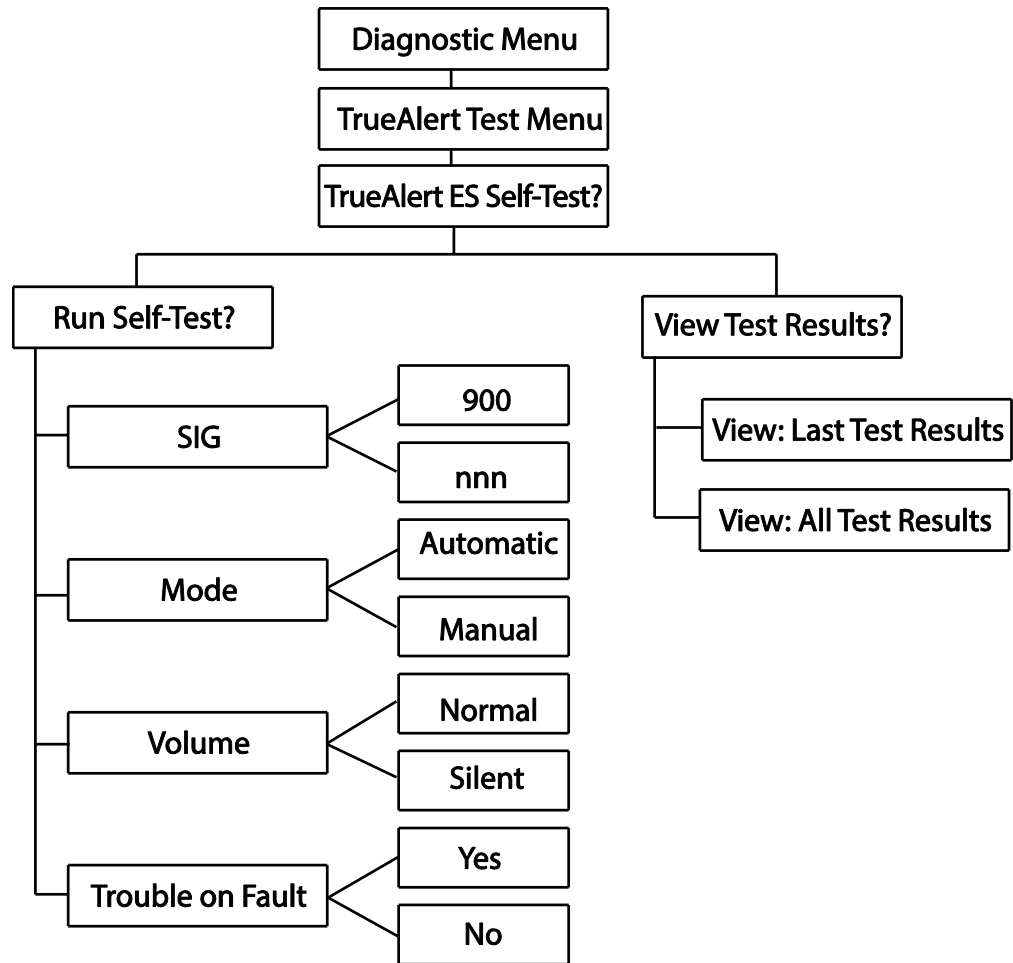


Figure 8-3. Self-Test Menu Overview

TrueAlert ES Appliance Self-Test , *Continued*

Running a Self-Test

When a Self-Test is initiated, the tested appliances activate their notification components. This results in the strobes flashing and, unless the “Volume option” is set to “Silence”, the horns or speakers sounding for up to 5 seconds. This should be taken into account while planning when to perform the Self-Test.

To run the Self-Test:

1. Select Run Self-Test from the TrueAlert ES Self-Test menu.
2. From the Run Self-Test screen, the user will have the chance to edit the test settings. Consult table 8-2 for the list of options and settings.

Table 8–2. Self-Test Options and Settings

Setting	Options
SIG: This option enables you to select the group of devices that you want to test.	900*: Runs the Self-Test on all TrueAlert ES notification appliances in SIG900 (i.e. all General Evac TrueAlert appliances).
	nnn: Runs the Self-Test on all TrueAlert ES notification appliances in SIGnnn, where “nnn” corresponds to a user selected TrueAlert Zone. Note: Zones 2 and 5 are not available for testing.
Mode: Select the mode in which the test will be performed.	Automatic*: Performs an automated Self-Test on all devices in the selected SIG.
	Manual: Places all devices in selected SIG into a test mode where they will wait for magnet switch activation before performing a Self-Test. Note: The manual Self-Test triggers a trouble at the panel indicating that the Panel is in manual Self-Test mode. This trouble will stay active during Self-Test and disappear once the user completes the test.
Volume: The test can be run with either the audible appliances (horn or speaker) on or off.	Normal*: Audible devices sound as they are configured for normal operation.
	Silent: Audible appliances do not sound during the Self-Test, only visual components are tested in this mode. Audible components in silent mode will be diagnosed as “NOT TESTED”.
Trouble on Fault: This determines if the Test-failures trigger cause a trouble or not.	Yes: Self-Test failures cause a device trouble.
	No*: Self-Test failures do not cause a trouble.
*Option selected by default.	

TrueAlert ES Appliance Self-Test , *Continued*

Running a Self-Test

3. Once the options and settings have been configured, return to the initial Run Self-Test screen and press on <Enter> to start the test.
4.
 - a) If your Self-Test is set to **Automatic**: The appliances will test themselves automatically. When all the appliances have been tested the Self-Test will stop on its own.
 - b) If your Self-Test is set to **Manual**: The person performing the test must manually poll the appliances with a magnet to test them. When polled, the appliances will activate their components. Please allow each appliance up to 15 seconds to activate. To complete the test, the user must return to the panel and stop the test by pressing <Enter>.
5. Once the Self-Test is complete, a screen will appear with a summary of the test results. From this screen, press <Enter> to see the detailed test results.

Note: A utility pseudo "P502 TRUEALERT SELF-TEST FAILED" will turn on if any appliance returns a Failed result. It can be turned off by performing a hardware reset.

Scheduling a Self-Test

A Self-Test can be programmed to start automatically at a pre-specified day and time by creating a specific custom control.

To schedule a Self-Test:

1. From within the programmer job, click on the Custom Control tab and remain in the Custom Control sub-tab. More information on Custom Controls can be found in the *ES Panel Programmer Manual 574-849*.
 2. Double-click on an unused Optional User Program custom control equation. The Custom Control Program Properties window will open.
 3. Enter the information requested in the window:
 - **Label:** Enter a label that describes the scheduled Self-Test.
 - **Enable Pseudo:** Leave this option at its default P19.
 4. Click on OK.
 5. Right click on the newly named Custom Control and select "Add Equation".
 6. Enter a label that describes the result of the equation. Click on OK.
-

Continued on next page

TrueAlert ES Appliance Self-Test , *Continued*

Scheduling a Self-Test

7. Go to the Equations window on the right of the programmer window and enter the equation:
 - The INPUT Opcode specifies when the self-test will run. For example, the existing “Compare Day-of-Week value” INPUT Opcode could be used to create a task that will execute every Sunday at 2:00am.
 - For the OUTPUT opcode, click on the Add button and select the “Run Self-Test” option from the CC Input/Output window. Click on Next to configure the scheduled self-test options:
 - i. Enter the point name of the TrueAlert Zone (SIGs) lists that will be tested by the scheduled self-test. Contrary to a regular self-test, multiple SIGs can be entered for testing in a scheduled self-test.
 - ii. In the “Qualifier” window, select the volume the test will be run at normal or silent. Click on Next.
 - iii. A second “Qualifier” window appears and allows the user to choose whether a failed device will trigger a trouble (select yes) or not (select no).

Equation example:

```
[ INPUTS ]
    WHEN DAY IS SUN
    AND IF ANALOG = CONSTANT 2.000000 CNTS
    A6 | Compare Analog | ANALOG | ANALOG | CURRENT HOUR
    AND IF ANALOG = CONSTANT 0.000000 CNTS
    A7 | Compare Analog | ANALOG | ANALOG | CURRENT MINUTE
[ END INPUTS ]
[ OUTPUTS ]
    RUN_SELF_TEST L257 NORMAL NO
[ END OUTPUTS ]
```

8. Save the job with the new custom control and download it to the FACP.
9. Enable the scheduled Self-Test at the Panel by accessing the pseudo point 503 and setting it to ON.
10. Once the scheduled Self-Test has been enabled it will start to run at the designated time.

Note: Complex custom equations can be written with the Self-test wizard to set up one or more schedules that will run the scheduled Self-test feature in the ES Fire Panel. See document 0574-849, *ES Panel Programmer's Manual* for details.

TrueAlert ES Appliance Self-Test , *Continued*

1. Select View Test Results from the TrueAlert ES Self-Test menu
2. From the View Test Results screen, the user can select the results they wish to view. See table 8-3 for the list of options.

Viewing Test Results

Table 8–3. View Results Options

Option	Description
View Last Test Results*	Select this option to display the test results from the last test performed by the panel. The “failed” appliances are listed first, followed by appliances that “passed” the Self-Test, and conclude with the “unsupported” appliances.
View All Test Results	Select this option to display the latest results for all the appliances that have ever been Self-Tested by the panel. The “failed” appliances are listed first, followed by appliances that “passed” the Self-Test, and conclude with the “unsupported” appliances.
*Option selected by default.	

TrueAlert ES Appliance Self-Test , *Continued*

Analyzing Self-Test Results

Once the Self-Test is complete, the panel will display the test results and group the devices into different categories.

Consult Table 8-4 for the explanation of the various diagnostics:

Table 8–4. View Results Options

Category	Diagnostic	Definition	User Action
Passed	Normal	The test results indicate that the appliance component is functioning properly.	N/A
Failed	No Output	The audible or visual sensor did not detect any sound or light from the appliance.	To clear the trouble* the appliance must be repaired and re-tested. A panel hardware reset will reset the pseudo but will not automatically clear the trouble.
	No Result / Not Tested	-The appliance did not return a result before the test ended. -The test was deactivated for a tested component. For example, if the “Volume” option is set to “Silent”, all audible (horn or speaker) components will display this result.	This trouble* can be cleared by performing a panel hardware reset.
Unsupported	Unsupported	The appliance tested is a legacy notification appliance and is not compatible with the TrueAlert ES Self-Test.	N/A

*Troubles will only be triggered if the “Trouble on Fault” option is set to “Yes”.

TrueAlert ES Appliance Self-Test , *Continued*

Self-Test Reports

Self -Test reports can be downloaded and printed in the same manner as other panel reports. The test results can also be uploaded from the IP File Transfer utility tool using the radio buttons dedicated to the Self-Test.

The following entries are examples of various result reports.

Table 8–5. Result Reports

Appliance Type	Status	Result Report Example				
		Point ID	Custom Label	Date	Visual	Audible
AV	Normal	SIG5-1	AV Second Floor	05 - Apr-13	NORMAL	NORMAL
	The “Volume” option is set to “Silent”	SIG6-1	AV Third Floor	05 - Apr-13	NORMAL	NOT TST
	The strobe is not responding	SIG6-2	AV Third Floor	05 - Apr-13	NO OUT	NORMAL
VO	Normal	SIG4-1	VO First Floor	05 - Apr-13	NORMAL	N/A
	Strobe is not responding	SIG4-2	VO First Floor	05 - Apr-13	NO OUT	N/A
AO	Normal	SIG5-2	AO Second Floor	05 - Apr-13	N/A	NORMAL
	The “Volume” option is set to “Silent”	SIG6-3	AO Third Floor	05 - Apr-13	N/A	NOT TST
	The horn is not responding	SIG6-4	AO Third Floor	05 - Apr-13	N/A	NO OUT
SO	Normal	SIG5-3	SO Second Floor	05 - Apr-13	N/A	NORMAL
	The “Volume” option is set to “Silent”	SIG5-4	SO Second Floor	05 - Apr-13	N/A	NOT TST
	The speaker is not responding	SIG5-5	SO Second Floor	05 - Apr-13	N/A	NO OUT
SV	Normal	SIG6-5	SV Third Floor	05 - Apr-13	NORMAL	NORMAL
	The “Volume” option is set to “Silent”	SIG6-6	SV Third Floor	05 - Apr-13	NORMAL	NOT TST
SV	The strobe is not responding	SIG6-7	SV Third Floor	05 - Apr-13	NO OUT	NORMAL
Legacy Notification Appliance	Normal	SIG5-6	Legacy AV Second Floor	N/A	UNSUPP	UNSUPP

Advanced Earth Fault Diagnostic (AEFD)

AEFD overview

Use the Advanced Earth Fault Diagnostic (AEFD) to see more information about the quality of field wiring in cases where an ES panel or Miniplex system is exhibiting intermittent communication issues, or where the existing earth fault search fails to adequately locate an earth fault. AEFD is compatible with EPS and ESS power supplies.

AEFD provides specific diagnostic information about the condition of each earth-searchable circuit on all AEFD supporting power supplies. On ES Panels that support the AEFD feature, it measures the quality of each circuit independently and an **Adv Earth Fault Diag** report includes the impedance value, a polarity value, and a circuit quality assessment of Good, Poor, or Fault. The following options are available in the AEFD menu:

Table 2. AEFD menu options

Diagnostic screen item	Description
Advanced Diagnostics	Advanced Diagnostics is a new option in the Earth Fault Diagnostics? menu.
Last Advanced Diagnostic Result	Use the Last Advanced Diagnostic Result option to view the results of a previously run AEFD.
Power Supply Select	Power Supply Select lists power supply cards upon which the Advanced Diagnostics can be performed. The cards on the list must meet two criteria: 1. The card must support AEFD. 2. The earth detect jumper must be set to designate this card as the one to perform Earth Fault Search at its' specific location.
Auxiliary power circuit	When you select the power supply card for the search, you must select whether to include or exclude AXPWR circuits in the search.

AEFD menus and options overview

IMPORTANT: Fire protection is disrupted while you are running AEFD, and a trouble condition reports at the front panel.

To initiate the AEFD, complete the following steps:

1. Press the **Menu** key on the front panel interface, and log in at access level 3 or higher.
 2. Use the **Next** or **Previous** button to scroll to **Diagnostic Functions**, and press **Enter**.
 3. Scroll to **Earth Fault Diagnostics** and press **Enter**.
 4. Scroll to **Advanced Diagnostics** and press **Enter**. The list of power supply cards supporting AEFD appears. If the list is empty verify that the **Earth Detect** jumper on the ESS or EPS is set to **ON**, so that the card can perform an earth fault search.
 5. Select a card from the list, and press **Enter**. Two options appear. Select the option to either exclude or include AXPWR points, and press **Enter**.
 6. The **Run Adv. Diagnostics** screen appears. Press **Enter** to run the AEFD. When the diagnostic test is complete, the results appear on the screen.
 7. To view the results of a previous AEFD, scroll to **Last Advanced Diagnostics Result** and press **Enter**.
-

Advanced Earth Fault Diagnostic (AEFD), *Continued*

Running AEFD

When you run the **Advanced Diagnostics**, the following pseudo points turn on:

- Digital pseudo point **P438, GROUND FAULT SEARCH ACTIVE** turns on. This pseudo point indicates that the **Advanced Diagnostic** is active, and that fire alarm operation is temporarily compromised.
- Digital pseudo point **P57, Keypad Inactivity Timer Disable** turns on. This pseudo point disables the timer that refreshes the LCD display on the front panel, after 30 seconds of inactivity.

When you run the AEFD, the power supply takes an earth to ground measurement with all earth searchable circuits turned on. For example, on the 4010 ESS, these circuits include all IDNAC and AuxNAC circuits on the ESS, and the RUI circuit on the CPU card, or on the 4100ES, all searchable circuits in the same unit. The CPU isolates all earth searchable circuits and takes another earth to ground measurement. Next, the CPU activates and measures the earth to ground condition of each individual field circuit, one by one. The report concludes, and the results display on the screen.

Note: All electrically isolated circuits that cannot generate a general earth fault trouble are excluded from the search, for example, RUI+ mother board, IDNET1+, IDNET2, and so on.

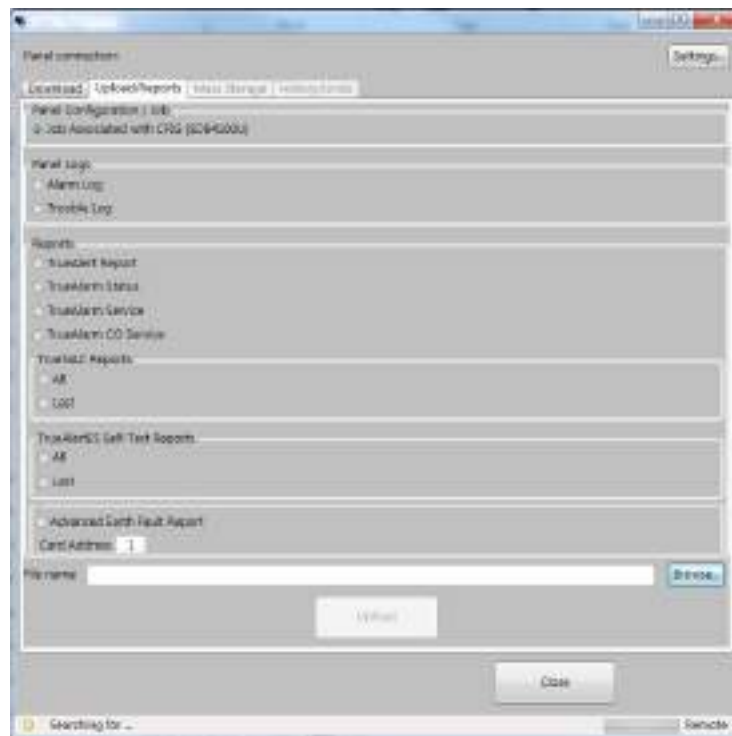


Figure 2. Report tab

Advanced Earth Fault Diagnostic (AEFD), *Continued*

AEFD results

The Advanced Diagnostic test provides a specific impedance value, a polarity value, and a circuit quality assessment of Good, Poor, or Fault. For more information about the Good, Poor, and Fault condition labels, see Table 3. AEFD condition labels.

Table 3. AEFD condition labels

Condition label	Impedance Range	Description
Good	$\geq 120\text{k}\Omega$	Measurements of at least $120\text{k}\Omega$ earth-to-ground pose no risk of causing an earth fault.
Poor	$> 60\text{k}\Omega < 120\text{k}\Omega$	Measurements between $60\text{k}\Omega$ and $120\text{k}\Omega$ earth-to ground do not cause an earth trouble, but they indicate poor quality of earth fault isolation. Investigate to prevent a future problem. Several channels that qualify as Poor can cause an earth fault trouble at the panel that Location Search diagnostic will not be able to isolate and find.
Fault	$\leq 60\text{k}\Omega$	Measurements of less than $60\text{k}\Omega$ cause an earth fault trouble. This circuit must be investigated and wiring or devices need to be replaced.

Chapter 9

Audio Operations

Introduction

The FACP audio system provides the following functionality.

- **Automatic, Pre-recorded Messages**, which automatically play in response to system events. For example, when a fire alarm is detected on the system, a message known as the Primary Evacuation message automatically plays.
 - **Manually Selected, Pre-Recorded Messages**. Some systems are capable of playing a prerecorded message when a specific button is pressed. For example, you may press a button to play an attention tone and phrase before using the microphone to make a live audio announcement.
 - **Live Audio**. Microphones connected to the audio system allow operators to issue live announcement messages.
-

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Single Channel Audio Operation	70
Single Channel Audio Plus Paging	73
Two Channel Audio Operation	75
Three to Eight Channel Audio System Operation	79

Single Channel Audio Operation

Overview

This section describes the single channel and single channel plus paging audio systems. The term *Single Channel Audio* refers to the audio capability of the system.

- A Single Channel Audio system has the ability to play pre-recorded messages **or** live audio messages, but it cannot do both at one time. For example, suppose the building's audio system is divided into eight groups, each of which represents a floor of the building. A single channel audio system can play a pre-recorded message or live audio one floor at a time.

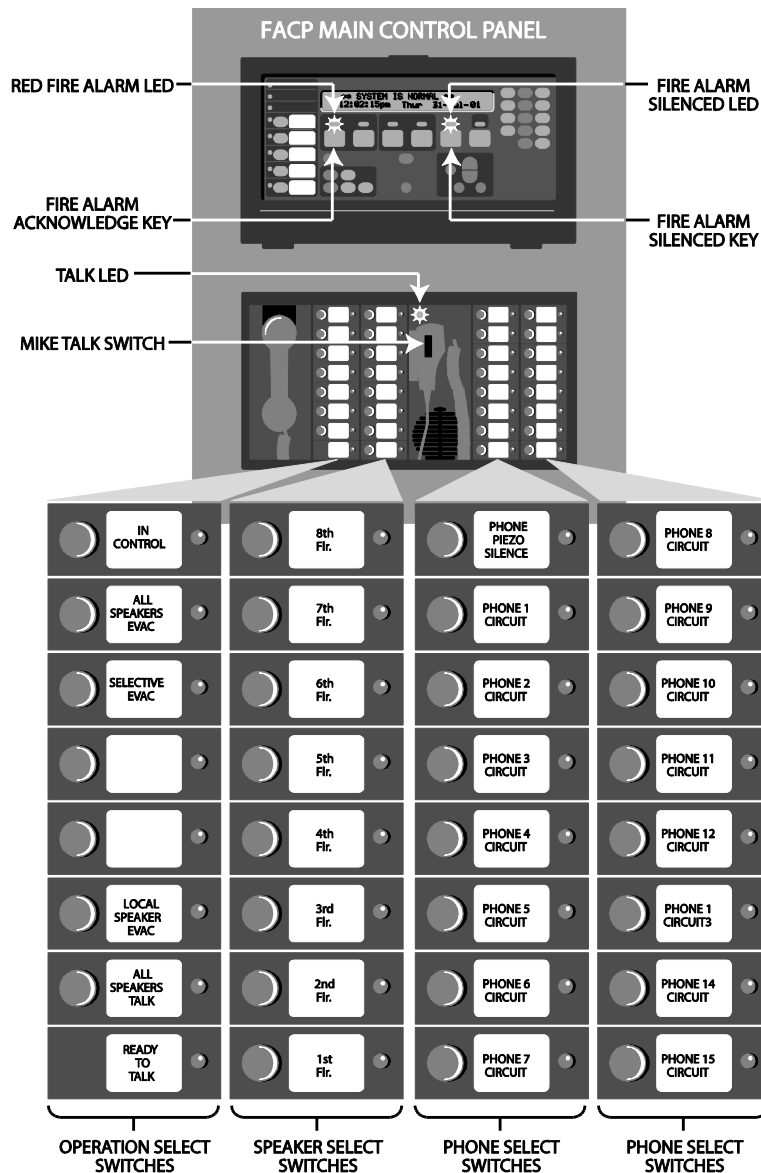


Figure 9–1. Single Channel Audio

Continued on next page

Single Channel Audio Operation, *Continued*

Evacuate Entire Building

1. Press the **All Speakers Evac** button to play the Primary Evacuation message on every speaker circuit connected to the audio system.

To indicate that the All Speakers Evac function has been activated, the LED associated with this button illuminates, as do the LEDs for each of the speaker groups (floors).

Evacuate Specific Floors when No Alarms are Present

Specific floors in the building can be manually evacuated at any time, even when no fire alarm condition is present. To do this, follow these steps.

1. Press the speaker circuit buttons corresponding to the speaker group (floors) you want to evacuate. The LEDs corresponding to the selected speaker groups illuminate.
2. Press the Selective Evac button. The LED associated with the Selective Evac button illuminates and the Primary Evacuation message plays on the selected speaker circuit.

Example To evacuate floors 1 and 2, you would first press the buttons labeled Floor 1 and Floor 2. Their LEDs light to let you know that these are the selected floors. Next, press the Selective Evac button. The Selective Evac LED lights and the message plays on the selected floors.

Evacuate Additional Floors During an Alarm

When a fire alarm occurs, the evacuation message automatically plays on specific floors but other areas of the building may not automatically play the message. Additional floors can be evacuated, as follows:

1. Press the speaker circuit button(s) for the additional floors. When you do this, the LEDs for the selected floors illuminate and the message plays on the speaker circuits for those floors.

Note: The evacuation message begins at whatever point it is currently at. For example, if the entire message is, "Please evacuate this Floor. Proceed to your designated assembly area," and you press the speaker circuit when the message is half through, only the second half of the message will play on the additional speaker circuit.

Continued on next page

Single Channel Audio Operation, *Continued*

Page Entire Building

1. Press the **All Speakers Talk** button. The LED associated with this button illuminates, along with the LEDs for each of the speaker circuits.
2. Key the microphone (depress the talk switch) and wait for the Ready to Talk LED to illuminate. When this LED is ON, talk into the microphone. The page is routed to all speaker circuits connected to the system.

Page Only Floors Being Evacuated

1. Key the microphone (depress the talk switch).
2. Wait for the **Ready to Talk** LED to illuminate. (It will not illuminate until the evacuation message has finished playing.)
3. Speak into the microphone to page the floors being evacuated.

Page Additional Floors

While an evacuation is in progress, you can page additional floors. To do this, follow these steps.

1. Press the buttons associated with the additional floors prior to keying the microphone. The LEDs associated with these floors turn ON.
2. Key the microphone and wait for the Ready to Talk LED to illuminate. Once this LED illuminates, speak into the microphone. The message is played on the additional floors.

Listen to What is Being Played Using the Local Speaker

1. Press the button labeled “Local Speaker” to hear what is being played at that time. The LED associated with this button illuminates when the button is pressed to indicate the function is active.

Note: If the user picks up the local phone or keys the microphone while the local speaker is active, the speaker shuts off to prevent feedback. Following local phone or microphone use, the local speaker must be manually turned back on if operation is required.

Silencing the Audio System

Press the Alarm Silence button on the front panel to silence the audio system. When you do this, the speakers remain on, but play nothing.

Resetting the Audio System

Press the System Reset button to reset the audio system. When you do this, the following occurs.

- All speakers and associated LEDs turn OFF.
 - The local speaker turns off.
 - Any paging that is in progress is canceled.
-

Single Channel Audio Plus Paging

Overview

A Single Channel Audio System Plus Paging can play one prerecorded message and one live message *at the same time*. In other words, a prerecorded message can be playing on Floor 1 while an announcement is being made on Floor 2. The hardware (microphone, switches, LEDs, etc.) is the same as single channel audio. Refer to Figure 9-1 for an example of the hardware configuration.

Evacuate Entire Building

1. Press the **All Speakers Evac** button to play the evacuation message on every speaker circuit connected to the audio system.

To indicate that the All Speakers Evac function has been activated, the LED associated with this button illuminates, as do the LEDs for each of the speaker circuits (floors).

Evacuate Specific Floors when No Alarms are Present

Specific floors in the building can be manually evacuated at any time, even when no fire alarm condition is present. To do this, follow these steps.

1. Press the speaker circuit buttons corresponding to the speaker group (floors) you want to evacuate. The LEDs corresponding to the selected speaker groups illuminate.
2. Press the **Selective Evac** button. The LED associated with the Selective Evac button illuminates and the Primary Evacuation message plays on the selected speaker circuit.

Example To evacuate floors 1 and 2, you would first press the buttons labeled Floor 1 and Floor 2. Their LEDs light to let you know that these are the selected floors. Next, press the Selective Evac button. The Selective Evac LED lights and the message plays on the selected floors.

Evacuate Additional Floors During an Alarm

When a fire alarm occurs, the evacuation message automatically plays on specific floors but other floors (or areas) of the building may not automatically play the message. Additional floors can be evacuated, as follows:

1. Press the speaker circuit button(s) for the additional floors. When you do this, the LEDs for the selected floors illuminate and the message automatically plays on the speaker circuits for those floors.

Note: The evacuation message begins at whatever point it is currently at. For example, the entire message may be, "Please evacuate this Floor. Proceed to your designated assembly area." If you press the speaker circuit when the message is half through, only the second half of the message will play on the additional speaker circuit.

Continued on next page

Single Channel Audio Plus Paging, *Continued*

Page Entire Building

1. Press the **All Speakers Talk** button. The LED associated with this button illuminates, along with the LEDs for each of the speaker circuits.
2. Key the microphone (depress the talk switch) and wait for the Ready to Talk LED to illuminate. When this LED is ON, talk into the microphone. The page is routed to all speaker circuits connected to the system.

Page Specific Floors

1. Press the buttons corresponding to the floors requiring the page. The LEDs associated with the selected buttons illuminate.
2. Key the microphone (depress the talk switch).
3. Wait for the **Ready to Talk** LED to illuminate and speak into the microphone to page the floors selected in Step 1.

Page Additional Floors

While a page is in progress, you can add floors to the existing page. To do this, follow these steps.

1. Press the buttons associated with the additional floors. The LEDs associated with these floors turn ON and the page is heard on their speaker circuits

Listen to What is Being Played Using the Local Speaker

1. Press the button labeled “Local Speaker” to hear what is being played on the EVAC channel at that time. The LED associated with this button illuminates when the button is pressed to indicate the function is active.

Note: If the user picks up the local phone or keys the microphone while the local speaker is active, the speaker shuts off to prevent feedback. The local speaker turns back on when the page is complete.

Silencing the Audio System

Press the Alarm Silence button on the front panel to silence the audio system. When you do this, the speakers remain on, but play nothing.

Resetting the Audio System

Press the System Reset button to reset the audio system. When you do this, the following occurs.

- All speakers and associated LEDs turn OFF.
 - The local speaker turns off.
 - Any paging that is in progress is canceled.
-

Two Channel Audio Operation

Overview

A Dual Channel Audio System can play one prerecorded message and one live message *at the same time*. In other words, a prerecorded message can be playing on Floor 1 while an announcement is being made on Floor 2.

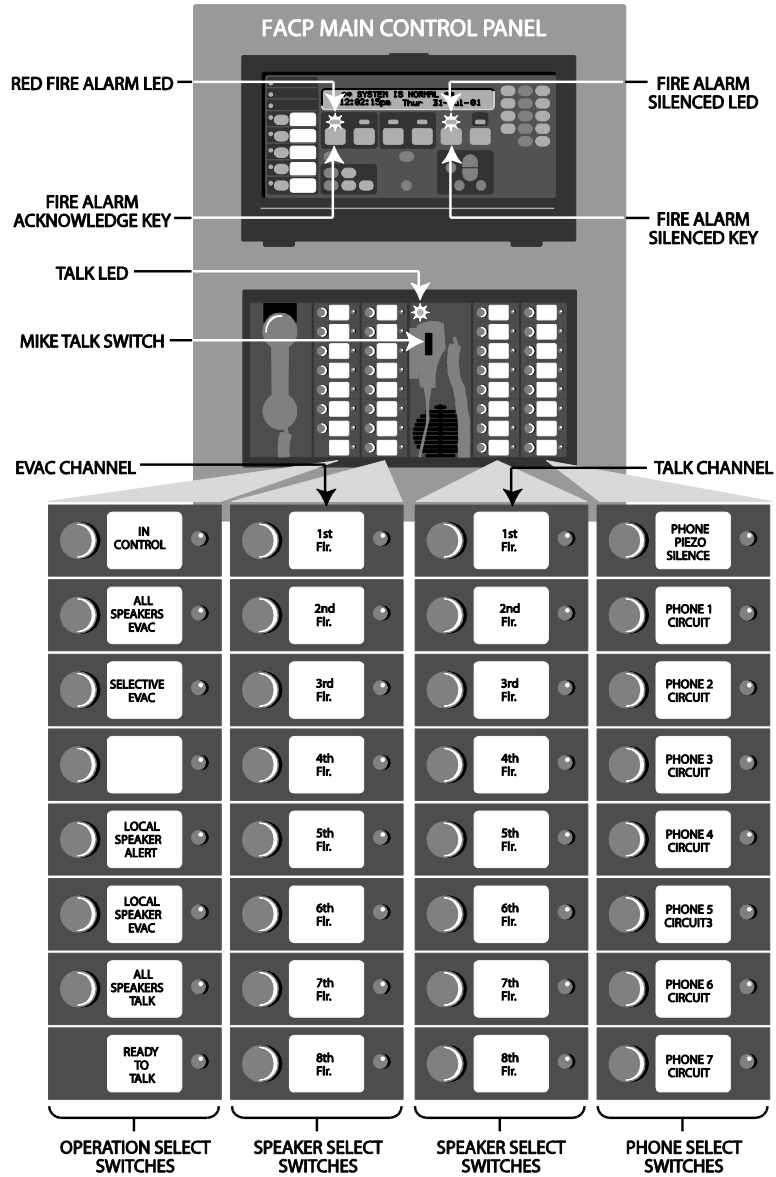


Figure 9–2. Two Channel Hardware

Continued on next page

Two Channel Audio Operation, *Continued*

Evacuate Entire Building

1. Press the **All Speakers Evac** button to play the evacuation message on every speaker circuit connected to the audio system.

To indicate that the All Speakers Evac function has been activated, the LED associated with this button illuminates, as do the LEDs for each of the speaker circuits (floors).

Evacuate Specific Floors when No Alarms are Present

Specific floors in the building can be manually evacuated at any time, even when no fire alarm condition is present. To do this, follow these steps.

1. Press the speaker circuit buttons corresponding to the speaker groups (floors) you want to evacuate. The LEDs corresponding to the selected speaker groups illuminate.
2. Press the **Selective Evac** button. The LED associated with the Selective Evac button illuminates and the Primary Evacuation message plays on the selected speaker circuit.

Example To evacuate floors 1 and 2, you would first press the buttons labeled Floor 1 and Floor 2. Their LEDs light to let you know that these are the selected floors. Next, press the Selective Evac button. The Selective Evac LED lights and the message plays on the selected floors.

Evacuate Additional Floors During an Alarm

When a fire alarm occurs, the evacuation message automatically plays on specific floors but other floors (or areas) of the building may not automatically play the message. Additional floors can be evacuated, as follows:

1. Press the speaker circuit button(s) for the additional floors. When you do this, the LEDs for the selected floors illuminate and the message automatically plays on the speaker circuits for those floors.

Note: The evacuation message begins at whatever point it is currently at. For example, the entire message may be, "Please evacuate this Floor. Proceed to your designated assembly area." If you press the speaker circuit when the message is half through, only the second half of the message will play on the additional speaker circuit.

Alert Specific Floors

Follow these steps to play the Alert message on specific floors (areas) of the building.

1. Press the speaker circuit buttons corresponding to the speaker groups (floors) on which you want to play the Alert message. The LEDs corresponding to the selected speaker groups illuminate.
 2. Press the **Selective Alert** button. The LED associated with the Selective Alert button illuminates and the Alert message plays on the selected speaker circuit.
-

Continued on next page

Two Channel Audio Operation, *Continued*

Evacuate Floors On Which Alert Message is Playing

Follow these steps to convert the Alert message playing on a group of speakers to an Evacuation message.

1. On the EVAC display card, press the buttons corresponding to the floors currently playing the Alert message (the LEDs on the Alert display card for these floors are lit).
2. Press the Selective Evac button.

When you do this, the following occurs.

- The Alert message stops playing
- The Evacuation message starts playing
- The LEDs on the Alert Display Card turn off
- The LEDs on the EVAC display card that correspond to the buttons pressed in Step 1 turn on

Note: If other floors were playing the Evacuation message, the evacuation message would start at the point it is at on the other floors.

Page Entire Building

1. Press the **All Speakers Talk** button. The LED associated with this button illuminates, along with the LEDs for each of the speaker circuits.
 2. Key the microphone (depress the talk switch) and wait for the Ready to Talk LED to illuminate. When this LED is ON, talk into the microphone. The page is routed to all speaker circuits connected to the system.
-

Page Specific Floors

1. Press the buttons corresponding to the floors requiring the page. The LEDs associated with the selected buttons illuminate.
 2. Key the microphone (depress the talk switch).
 3. Wait for the **Ready to Talk** LED to illuminate and speak into the microphone to page the floors selected in Step 1.
-

Page Additional Floors

While a page is in progress, you can add floors to the existing page. To do this, follow these steps.

1. Press the buttons associated with the additional floors. The LEDs associated with these floors turn ON and the page is heard on their speaker circuits
-

Listen to What is Being Played on the EVAC Channel Using the Local Speaker

1. Press the button labeled “Local Speaker” to hear what is being played on the EVAC channel at that time. The LED associated with this button illuminates when the button is pressed to indicate the function is active.

Note: If the user picks up the local phone or keys the microphone while the local speaker is active, the speaker shuts off to prevent feedback. The local speaker turns back on when the page is complete.

Continued on next page

Two Channel Audio Operation, *Continued*

Listen to What is Being Played on the Alert Channel Using the Local Speaker

1. Press the button labeled “Local Speaker Alert” to hear what is being played on the Alert channel at that time. The LED associated with this button illuminates when the button is pressed to indicate the function is active.

Note: If the user picks up the local phone or keys the microphone while the local speaker is active, the speaker shuts off to prevent feedback. The local speaker turns back on when the page is complete.

Silencing the Audio System

Press the Alarm Silence button on the front panel to silence the audio system. When you do this, the speakers remain on, but play nothing.

Resetting the Audio System

Press the System Reset button to reset the audio system. When you do this, the following occurs.

- All speakers and associated LEDs turn OFF.
 - The local speaker turns off.
 - Any paging that is in progress is canceled.
-

Three to Eight Channel Audio System Operation

Overview

Triple Channel Audio

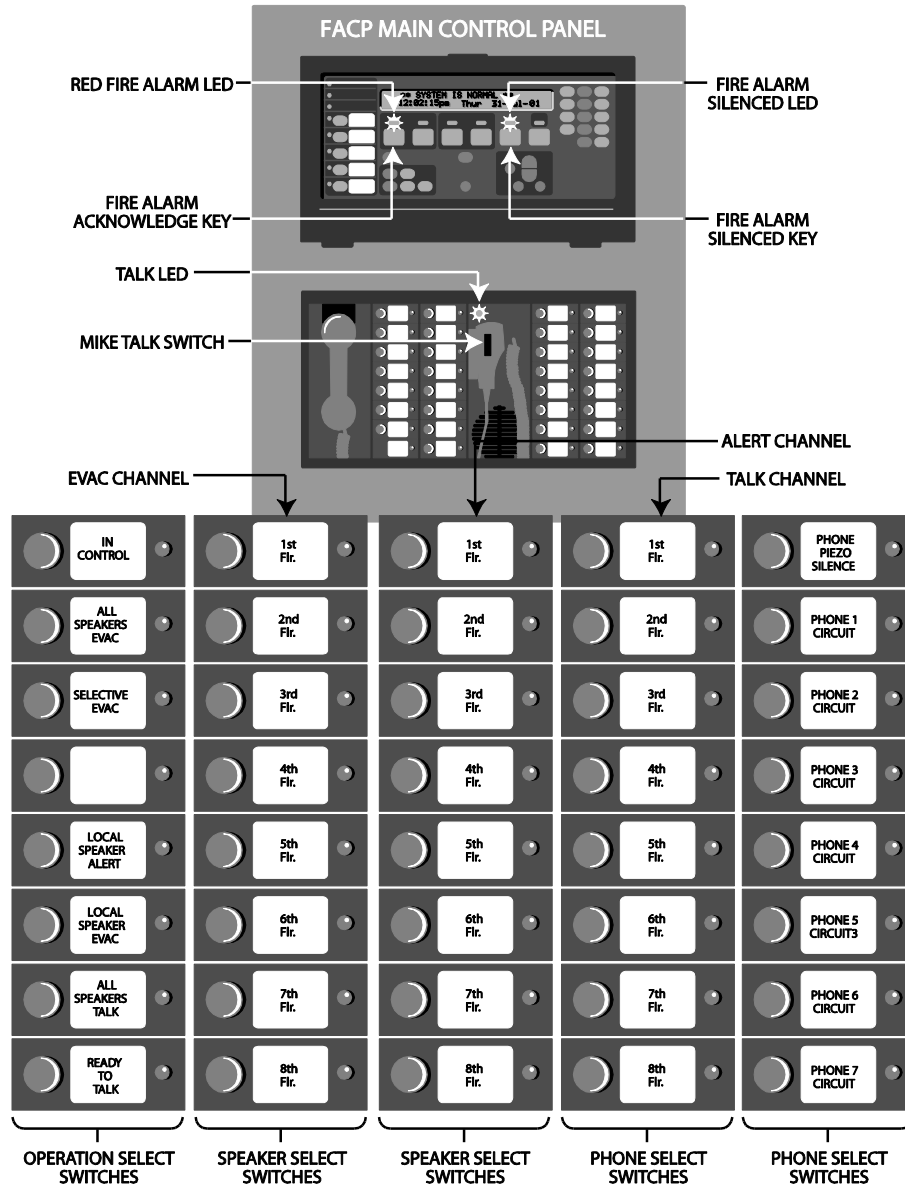


Figure 9-3. Three to Eight Channel Hardware

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Three to Eight Channel Audio System Operation, *Continued*

Evacuate Entire Building

1. Press the **All Speakers Evac** button to play the evacuation message on every speaker circuit connected to the audio system.

To indicate that the All Speakers Evac function has been activated, the LED associated with this button illuminates, as do the LEDs for each of the speaker circuits (floors).

Evacuate Specific Floors when No Alarms are Present

Specific floors in the building can be manually evacuated at any time, even when no fire alarm condition is present. To do this, follow these steps.

1. Press the speaker circuit buttons corresponding to the speaker groups (floors) you want to evacuate. The LEDs corresponding to the selected speaker groups illuminate.
2. Press the **Selective Evac** button. The LED associated with the Selective Evac button illuminates and the Primary Evacuation message plays on the selected speaker circuit.

Example To evacuate floors 1 and 2, you would first press the buttons labeled Floor 1 and Floor 2. Their LEDs light to let you know that these are the selected floors. Next, press the Selective Evac button. The Selective Evac LED lights and the message plays on the selected floors.

Evacuate Additional Floors During an Alarm

When a fire alarm occurs, the evacuation message automatically plays on specific floors but other floors (or areas) of the building may not automatically play the message. Additional floors can be evacuated, as follows:

1. Press the speaker circuit button(s) for the additional floors. When you do this, the LEDs for the selected floors illuminate and the message automatically plays on the speaker circuits for those floors.

Note: The evacuation message begins at whatever point it is currently at. For example, the entire message may be, "Please evacuate this Floor. Proceed to your designated assembly area." If you press the speaker circuit when the message is half through, only the second half of the message will play on the additional speaker circuit.

Alert Specific Floors

Follow these steps to play the Alert message on specific floors (areas) of the building.

1. Press the speaker circuit buttons corresponding to the speaker groups (floors) on which you want to play the Alert message. The LEDs corresponding to the selected speaker groups illuminate.
 2. Press the **Selective Alert** button. The LED associated with the Selective Alert button illuminates and the Alert message plays on the selected speaker circuit.
-

Continued on next page

Three to Eight Channel Audio System Operation, *Continued*

Evacuate Floors On Which Alert Message is Playing

Follow these steps to convert the Alert message playing on a group of speakers to an Evacuation message.

1. On the EVAC display card, press the buttons corresponding to the floors currently playing the Alert message (the LEDs on the Alert display card for these floors are lit).
2. Press the Selective Evac button.

When you do this, the following occurs.

- The Alert message stops playing.
- The Evacuation message starts playing.
- The LEDs on the Alert Display Card turn off.
- The LEDs on the EVAC display card that correspond to the buttons pressed in Step 1 turn on.

Note: If other floors were playing the Evacuation message, the evacuation message would start at the point it is at on the other floors.

Page Entire Building

1. Press the **All Speakers Talk** button. The LED associated with this button illuminates, along with the LEDs for each of the speaker circuits.
 2. Key the microphone (depress the talk switch) and wait for the Ready to Talk LED to illuminate. When this LED is ON, talk into the microphone. The page is routed to all speaker circuits connected to the system.
-

Page Specific Floors

1. Press the buttons corresponding to the floors requiring the page. The LEDs associated with the selected buttons illuminate.
 2. Key the microphone (depress the talk switch).
 3. Wait for the **Ready to Talk** LED to illuminate and speak into the microphone to page the floors selected in Step 1.
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Page Additional Floors

While a page is in progress, you can add floors to the existing page. To do this, follow these steps.

1. Press the buttons associated with the additional floors. The LEDs associated with these floors turn ON and the page is heard on their speaker circuits
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Continued on next page

Three to Eight Channel Audio System Operation, *Continued*

Play Announcements on Specific Floors

Multi channel audio systems have the capability to play specific announcements on specific floors. To do this, follow these steps.

1. Press the button corresponding to the floors.
2. Press the Start All Selected button.

When you do this, the LEDs on the display card light and the announcement plays over the speakers.

Listen to What is Being Played on the EVAC Channel Using the Local Speaker

1. Press the button labeled “Local Speaker” to hear what is being played on the EVAC channel at that time. The LED associated with this button illuminates when the button is pressed to indicate the function is active.

Note: If the user picks up the local phone or keys the microphone while the local speaker is active, the speaker shuts off to prevent feedback. The local speaker turns back on when the page is complete.

Listen to What is Being Played on the Alert Channel Using the Local Speaker

1. Press the button labeled “Local Speaker Alert” to hear what is being played on the Alert channel at that time. The LED associated with this button illuminates when the button is pressed to indicate the function is active.

Note: If the user picks up the local phone or keys the microphone while the local speaker is active, the speaker shuts off to prevent feedback. The local speaker turns back on when the page is complete.

Silencing the Audio System

Press the Alarm Silence button on the front panel to silence the audio system. When you do this, the speakers remain on, but play nothing.

Resetting the Audio System

Press the System Reset button to reset the audio system. When you do this, the following occurs.

- All speakers and associated LEDs turn OFF.
 - The local speaker turns off.
 - Any paging that is in progress is canceled.
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