

# PT25W24

## POWERTONE® SYSTEM FOR USE IN FIRE-PROTECTIVE SIGNALLING SYSTEMS

### WARNING MESSAGE TO INSTALLERS, USERS AND MAINTENANCE PERSONNEL

The equipment described herein is listed by Underwriters Laboratories for use as a control unit accessory in a Fire-Protective Signalling System only when installed in the manner described herein. The installer must also be aware of requirements by building code or fire officials having jurisdiction.

It is possible to install the Power Tone System incorrectly or arrange system components and installation wiring in such a manner that life safety functions are not properly performed and, as a result, lives may be lost.

To minimize this possibility, become familiar with the system layout and operation of the entire Fire-Protective Signalling System. Do not alter any mechanical or electrical features of the equipment supplied. Become familiar with the Building Code and Fire Prevention Code or other authority having jurisdiction requirements in the area of the installation.

If there is application or installation information not clear or not covered herein, communicate in writing to Federal Signal Corporation, Commercial Products Group, for installation advice.

#### CAUTION

*Before installation, ensure that Fire-Protective Signalling System power is disconnected. Check field wiring lines to ensure that voltages are not present.*

*Warranty is void if the equipment is damaged by improperly connected untested wiring or if fused improperly.*

#### IMPORTANT

*This system will not work properly when connected to speakers or other assemblies which would allow a signal circuit path to ground. Ensure that attached speakers do not allow paths to ground.*

### I. GENERAL DESCRIPTION.

The CPGTone Amplifier System is a Listed Control Unit System Accessory consisting of a Power Tone Module and one or more Alarm Signal Mini-Modules. It can provide six distinctive tones to Listed speakers via Class B (Style W) circuits when controlled by a Listed 24-volt fire alarm control unit. The six tones available include: horn, bell, wail, interrupted horn, interrupted bell, and slow whoop. Tones can be either field selected by cutting jumpers on the Power Tone Module or selected by external dry contacts.

The Power Tone Module produces a 25 Watt RMS square wave output at 24VDC (nominal). When used with one or more Listed Alarm Signal Mini-Modules, it will operate 25VRMS-type fire Listed speakers up to a total of 25 watts of audio output. Power is supplied to the Power Tone System by either the polarity reversing and/or non-polarity reversing power output terminals of a Listed fire alarm control unit or Listed auxiliary power supply.

Visual indication of tone generator trouble and/or power trouble is provided by a green LED. A trouble is indicated when the green LED is not illuminated. Also, one Form C Trouble output relay is provided.

The Alarm Signal Mini-Module power is supplied by the non-polarity

reversing power outputs from a Listed fire alarm control unit or a Listed auxiliary power supply. The selected tone from the Power Tone Module is applied to the tone input terminals. Two Class B (Style W) alarm indicating circuits, with current limiting protection, apply the selected tone's audio output to Listed speakers. Visual indication of Mini-Module trouble and/or power trouble is provided by a red LED. Trouble is indicated when the red LED is NOT illuminated. One 24VDC (nominal) alarm input relay and one Form C Trouble output relay are also provided.

The Power Tone System kit MUST be mounted within a Listed Control Unit equipment cabinet. They are available in the following sizes:

| Model No. | Size (H x W x D) |
|-----------|------------------|
| ULFB1     | 12" x 12" x 4"   |
| ULFB2     | 15" x 11" x 4"   |
| ULFB3     | 18" x 15" x 4"   |

### II. INSTALLATION.

#### WARNING

*Peoples' lives depend on proper operation of the Fire-Protective Signalling System. Notify an authority that the system is being modified.*

*Before proceeding, ensure that system power is disconnected.*

#### A. Unpacking.

After unpacking the Power Tone System kit, inspect the contents for damage that may have occurred in transit. If damaged, do not attempt to install or operate the kit. File a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

Before proceeding, ensure that the parts shown in the KIT CONTENTS LIST (Paragraph V.) have been included.

#### B. Mounting.

The Power Tone Module and at least one Alarm Signal Mini-Module are intended to be part of a supervised Fire-Protective Signalling System. They MUST be installed within a separate enclosure, and the conductors which interconnect the Power Tone System to the fire alarm control unit must be installed in not more than 20-feet of conduit or equivalent protection against mechanical injury. Additionally, the equipment wired to the Power Tone System MUST be in the same room as the fire alarm control unit or auxiliary power supply, except for speakers and associated wiring.

Refer to paragraph I. for a description of available Listed Control Unit equipment cabinets. Installation instructions are packed with the cabinet(s).

#### CAUTION

*Positive mounting is dependent on the use of the supplied sheet metal screws. The adhesive pads are supplied to assist*

*in positioning the mounting plate in the user-supplied Listed Control Unit equipment cabinet. Ensure that mounting plate and mounting surface are clean and dry before affixing adhesive pads. If necessary, clean surfaces with the supplied isopropyl alcohol pads.*

1. Position the mounting plate with the standoffs down. Peel the paper backing from one side of an adhesive pad (supplied). Apply the adhesive pad at one corner of the mounting plate. Repeat with the other adhesive pads.

#### NOTE

*Do not peel the paper backing from the other side of the adhesive pads at this time.*

2. Position the mounting plate with the standoffs facing you. Align the holes in the fish paper (supplied) with the standoffs on the mounting plate, and slide the fish paper over the standoffs.

3. Orientate the modules as shown in figure 1. Secure the Power Tone Module and the Alarm Signal Mini-Module to the mounting plate with the 8-32 screws (supplied).

4. Using the mounting plate as a template, drill two 5/32" diameter holes.

5. Peel the backing from the adhesive pads. Position the mounting plate assembly and press it firmly in place. (See mounting locations as noted in the instruction sheet for models ULFB1, ULFB2, and ULFB3- Federal part number 256834.)

6. Secure the plate in position with the #10 sheet metal screws.

#### C. Electrical Connections.

#### IMPORTANT

*Determine if the existing fire alarm control unit can provide the additional current required to operate the Power Tone Module and Alarm Signal Mini-Module(s) in both the supervisory and alarm conditions. If the new system's current requirements exceed the capability of the fire alarm control unit in both conditions, use one or more Listed auxiliary power supplies (as required) to meet or exceed the new system's current requirements. Use figure 2 or figure 3 as a guide and wire the system.*

If more than one Mini-Module is required per Power Tone System, use figures 4 and 5 as a guide to wire the system.

Figures 2 through 5 show End-of-Line (EOL) resistors as part of the circuitry. As noted, some of the EOL resistors are provided by the Fire Alarm Control Unit manufacturer. Alarm Signal Mini-Modules are supplied with a 6.34K ohm resistor connected across each set of audio output terminals. When connecting a speaker to an output, remove and discard the 6.34K ohm resistor, and install an EOL resistor (CPG part number 6.34K) as shown in the applicable figure.

1. See figure 2 for typical system wiring when the fire alarm control unit is capable of providing current for the entire Fire-Protective Signalling System.

#### NOTE

*Supervisory condition current is provided by the fire alarm control unit's continuous panel output. Alarm condition current is provided by the fire alarm control unit's polarity reversing signal circuit output.*

2. See figure 3 for typical system wiring when one or more Listed auxiliary power supplies for Fire-Protective Signalling Systems are required.

3. See figures 4 and 5 when more than one Alarm Signal

Mini-Modules are required.

#### D. Tone Selection.

Two methods for tone selection are provided: the fixed (permanent) method and the external dry contact method.

##### 1. Fixed (Permanent) Method.

See figure 1 and table 1. Select the desired tone and cut the applicable insulated jumper wire(s) on the Power Tone Module.

##### 2. External Dry Contact Method.

See figure 1. If tone selection from external dry contacts is desired, cut all four insulated jumper wires on the Power Tone Module. Use an eight-position header connector and 24" cable (order Federal Part No. PTREM) and connect normally-closed single-pole contacts to each pair of header pins at J1. The desired tone can be selected by opening the applicable contact(s).

### III. SYSTEM TEST.

Refer to the instructions included with the fire alarm control unit for trouble indication modes. To clear the trouble indication, some systems may require a manual trouble reset after each test. After installation and tone selection are complete, test the system as follows:

A. Apply power to the Fire-Protective Signalling System. If connections are correct, no zone or system trouble will be indicated on the fire alarm control unit.

B. An open or a short in the audio output circuits must activate a system trouble indication on the fire alarm control unit. Test as follows:

1. Place a jumper across terminals 13 and 14 on the Alarm Signal Mini-Module(s). Look for a system trouble indication on the fire alarm control unit. Remove the jumper to clear the trouble. Some systems may require a manual trouble reset.

2. Repeat step 1 using the terminals 15 and 16 on the Alarm Signal Mini-Module(s).

3. Disconnect the wire(s) connected to terminal 13 on the Alarm Signal Mini-Module(s). Look for a system trouble indication on the fire alarm control unit. Replace the wire(s) to clear the trouble. Some systems may require a manual trouble reset.

4. Repeat step 3 using terminals 14, 15, and 16 on the Alarm Signal Mini-Module(s).

C. If the fire alarm control unit or auxiliary power supply (if used) has ground fault detection capability and is being used to power the Power Tone Module and Alarm Signal Mini-Module(s), test for ground fault detection as follows:

1. Place a jumper between earth ground and terminal 13 on the Alarm Signal Mini-Module. Look for a ground fault indication on the fire alarm control unit or auxiliary power supply (if used). Remove the jumper to clear the fault indication.

2. Repeat step 1 using terminals 14, 15, and 16.

D. An open in the trouble circuit wiring between the Power Tone Module and the Alarm Signal Mini-Module(s) must activate a trouble indication on the fire alarm control unit. Test as follows:

1. Disconnect the wire between the fire alarm control unit and terminal 7 on the Power Tone Module. Look for trouble indication on the fire alarm control unit. Replace the wire to clear the trouble indication. Some systems may require a manual trouble reset.

2. Disconnect the wire between terminal 10 of the Power Tone Module and terminal 9 of the Alarm Signal Mini-Module(s). Look

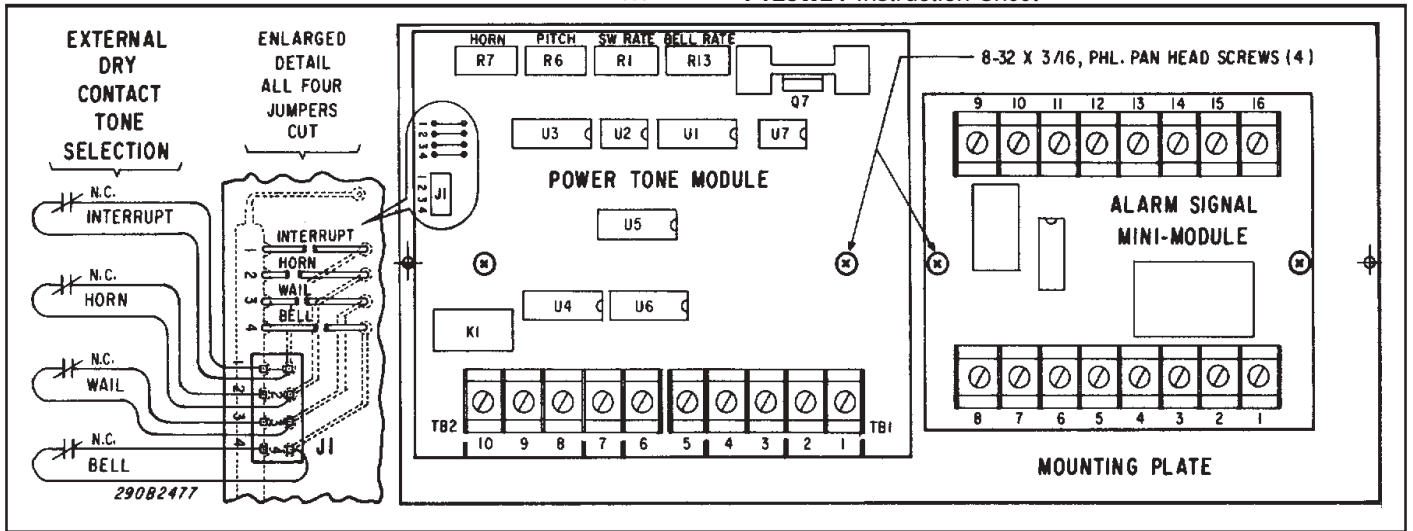


Figure 1.

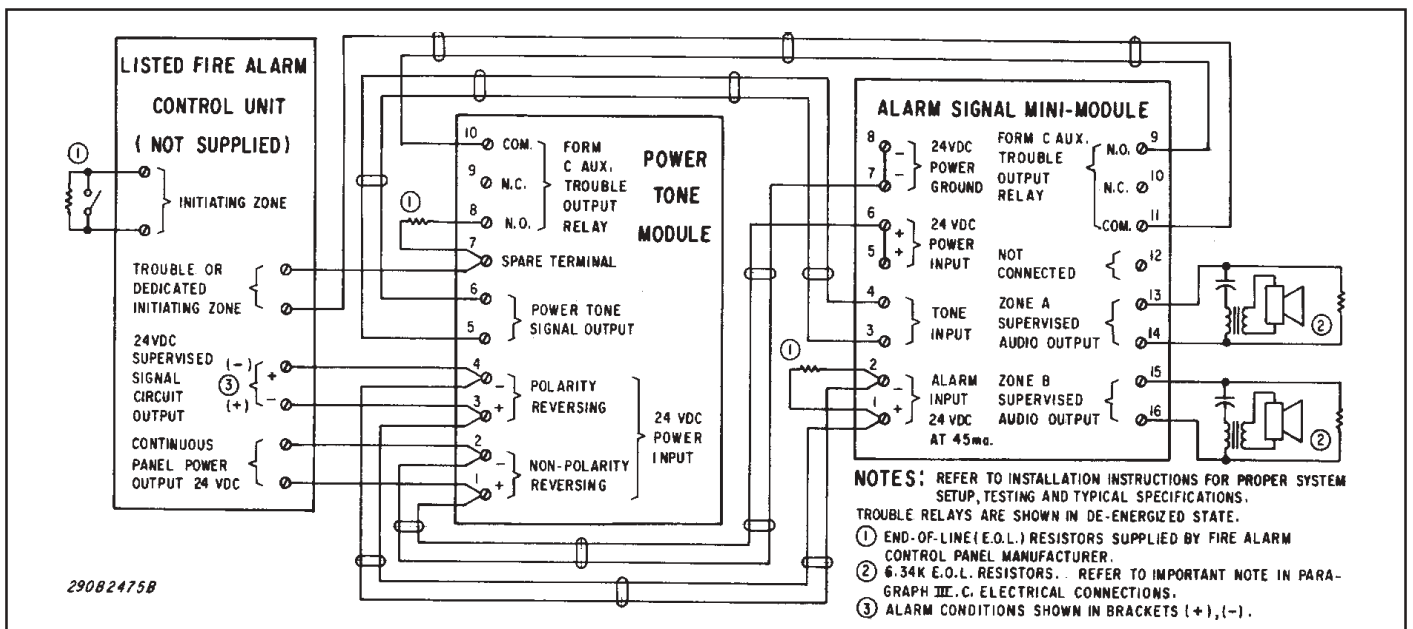


Figure 2.

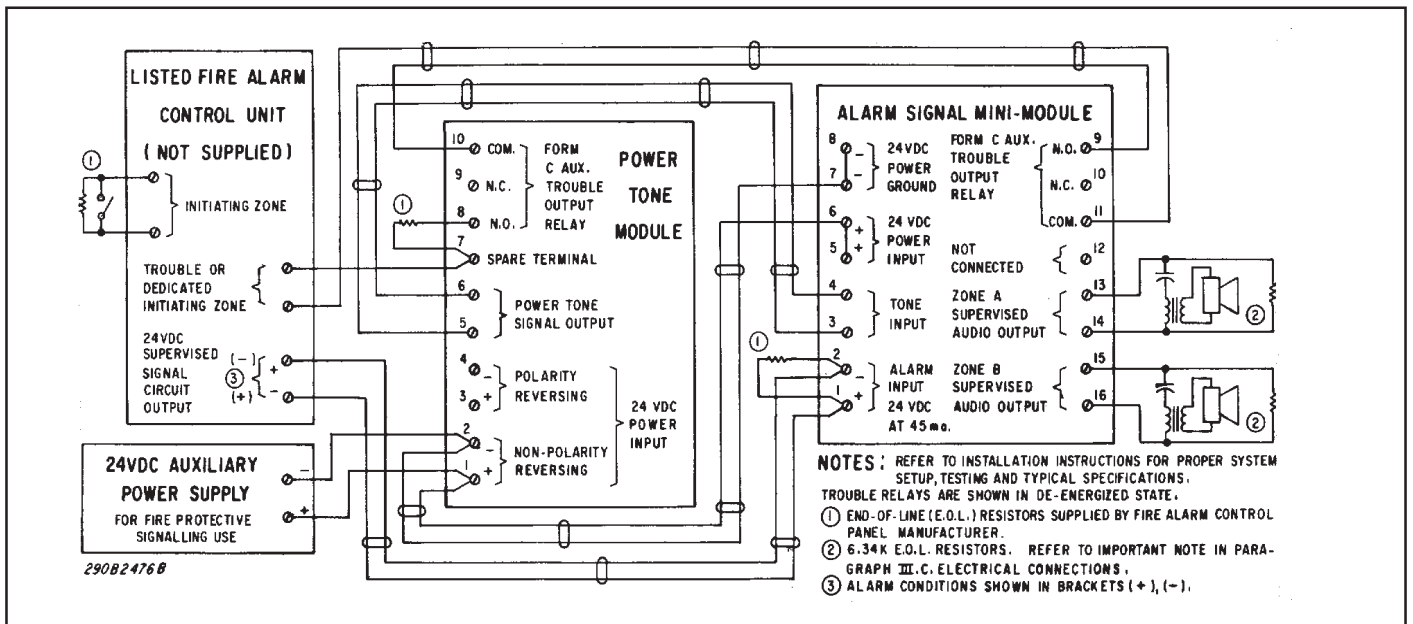


Figure 3.

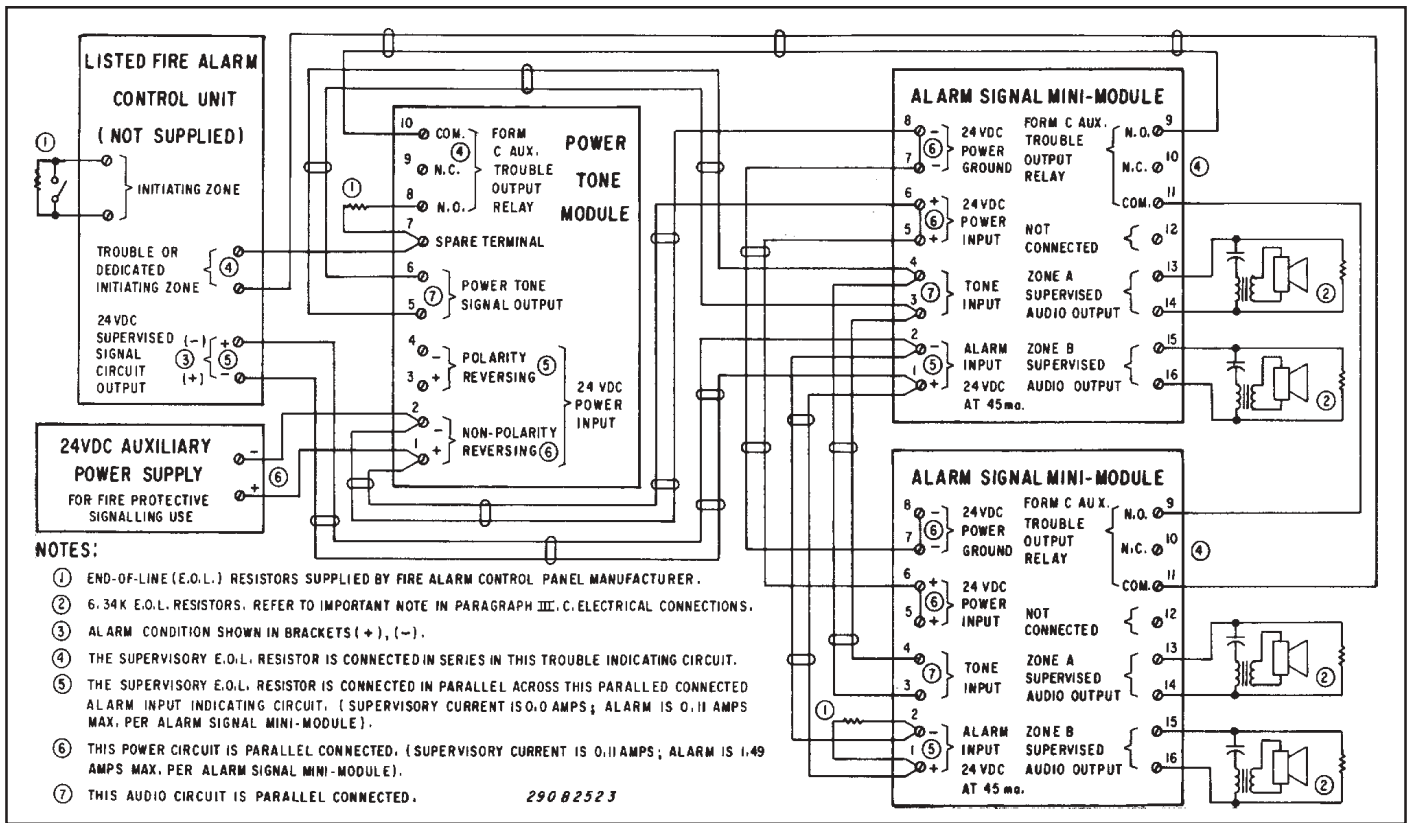


Figure 4.

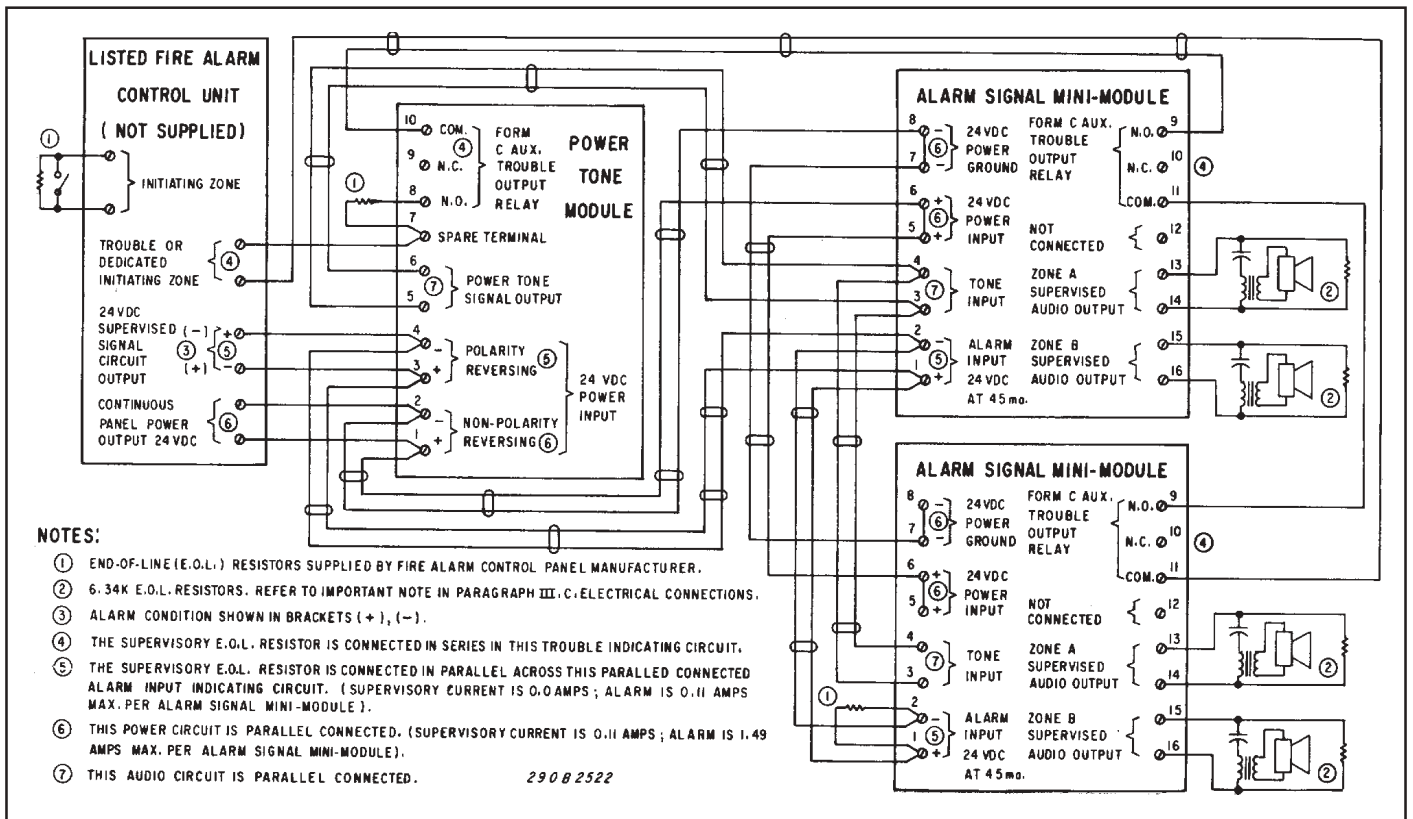


Figure 5.

for trouble indication on the fire alarm control unit. Replace the wire to clear the trouble indication. Some systems may require a manual trouble reset.

3. Disconnect the wire between the fire alarm control unit and terminal 11 on the Alarm Signal Mini-Module(s). Look for trouble indication on the fire alarm control unit. Replace the wire to clear the trouble indication. Some systems may require a manual trouble reset.

E. With the system in the supervisory mode, momentarily place a jumper across terminals 5 and 6 on the Power Tone Module. Look for trouble indication on the fire alarm control unit. Perform a manual trouble reset to clear the trouble indication.

F. Activation of an initiating device must sound the selected tone in the desired signalling zone(s). Test as follows:

1. Refer to the instructions included with the fire alarm control unit and perform a system test. Ensure that the selected tone is sounding in the desired signalling zone(s). Perform a manual reset to clear the alarm condition, if necessary.

2. Activate an initiating device on any zone of the fire alarm control unit. Ensure that the selected tone is sounding in the desired signalling zone(s). Perform a manual reset to clear the alarm condition, if necessary.

#### IMPORTANT

*After the Fire-Protective Signalling System has been thoroughly tested for proper operation, retest the system in compliance with NFPA, state, or local fire codes.*

#### IV. KIT CONTENTS LIST.

| Qty. | Description                | Model Number |
|------|----------------------------|--------------|
| 1    | Power Tone Module          | PTBD         |
| 1    | Alarm Signal Mini-Module   | 5130-107-01  |
| 1    | Plate, Mounting            | PT Plate     |
| 1    | Insulator, Fish Paper      |              |
| 4    | Adhesive Pad               |              |
| 4    | Screws, Sems, 8-32 x 3/16" |              |
| 2    | Screws, #10 Sheet Metal    |              |
| 2    | Pad, Isopropyl Alcohol     |              |

#### WARNING

*Unauthorized repair/servicing of equipment may result in degradation of performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair/retrofit of parts.*

#### V. SERVICE.

The factory will service your equipment or provide technical assistance with any problem that cannot be handled locally with satisfaction or promptness.

If any unit is returned to factory for repair, it can be accepted only if we are notified by mail or phone in advance of its arrival. Such notice should clearly indicate service requested and give all pertinent information regarding nature of problem and, if possible, its cause.

Communications and shipments should be addressed to:

Technical Service Department  
Commercial Products Group  
2519 - 4th Avenue  
Moline, IL 61265  
800.521.8219 • FAX 800.225.4109

| <i>Desired Tone</i> | <i>Cut Jumper Wire(s)</i> |
|---------------------|---------------------------|
| Horn                | 2                         |
| Wail                | 3                         |
| Bell                | 4                         |
| Interrupted Horn    | 1 & 2                     |
| Slow Whoop          | 1 & 3                     |
| Interrupted Bell    | 1 & 4                     |

*Table 1. Tone Selection.*