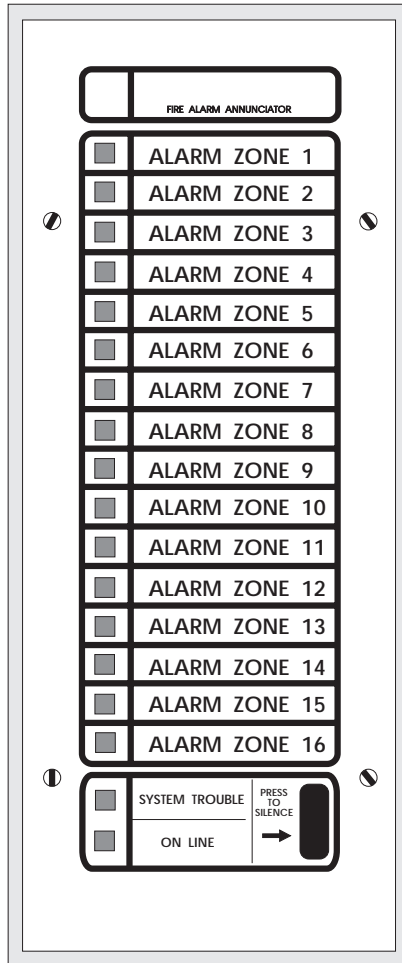




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The AFM-16AF Annunciator Fixed Module

*for the Sensiscan 2000
 Fire Alarm Control Panels*



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Section One: The AFM-16A Module

The AFM-16AF Annunciator Fixed Module provides the control panel with discrete display and control points. The annunciator turns its LEDs ON and OFF as commanded by the system's CPU. In addition, it reports selected switch activations to the CPU for action.

Limits

The AFM-16AF is intended for use in systems that require 16 annunciation points or less. Each annunciator's address is internally fixed at "1."

Capabilities

The AFM-16AF can annunciate the following:

CPU Points (System Alarm, System Trouble, Activation of Notification Circuits 1 & 2, Relay signaling and Relay)
IZ-4F and IZ-8F Initiating Device Circuits (alarm)
IC-4F and Notification Appliance Circuits (circuit activation)
CR-4F and Control Relays (circuit activation)
TC-2F and TC-4F circuits (circuit activation)

The AFM-16AF is fully compatible with the Sensiscan 2000.

Electrical Ratings

Input Voltage: 24 volts DC (must be power-limited).

Current Draw from 24 volt DC:

Standby current 25mA, Alarm current 65mA

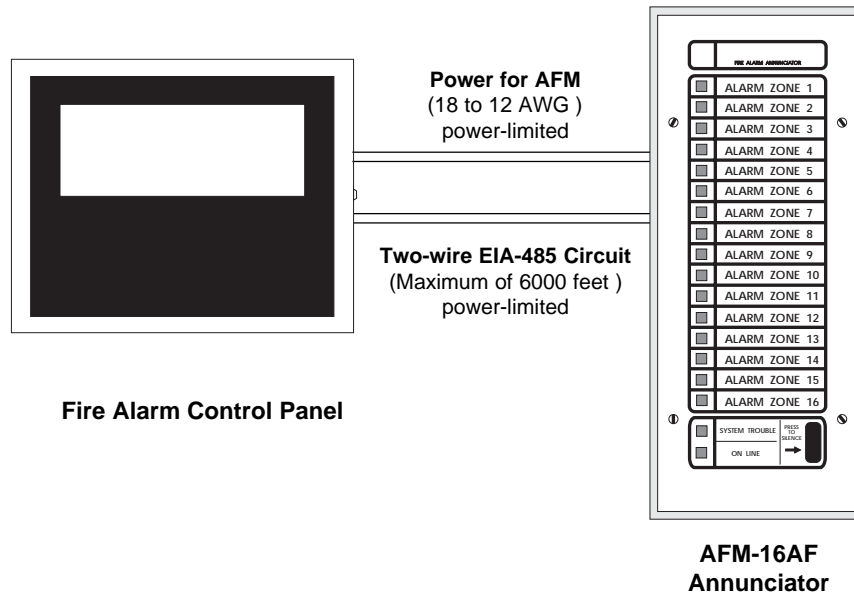
Current draw from secondary power source (batteries): 30mA

Data Communications Port: EIA-485 operating at 20.833 Kbaud (must be power-limited).

Wiring

Communication between the control panel and the AFM is accomplished over a two-wire power-limited EIA-485 serial interface (formerly referred to as RS-485). This communication, to include the wiring, is supervised by the control panel's CPU. Loss of communication results in "System Trouble" and "Module Failure" indications at the CPU. Power for the AFM is provided via a separate power loop from the control panel which is inherently supervised (loss of power also results in a communication failure at the control panel) and must be power-limited. No End-Of-Line Resistor needs to be installed because the EIA-485 circuit is internally terminated on the annunciator.

**Figure 1-1:
Wiring specifications**



Wiring Specifications

The EIA-485 circuit cannot be T-Tapped; it must be wired in a continuous fashion from the control panel to the AFM. The maximum wiring distance between the panel and annunciator is 4000 feet. The wiring size should be a 18 AWG to 14 AWG twisted-pair cable having a Characteristic Impedance of approximately 120 ohms. Limit the total wire resistance to 100 ohms on the EIA-485 circuit, and to 10 ohms on the power run to the annunciator. Do not run cable adjacent to, or in the same conduit as, 120 volts AC service, noisy electrical circuits that are powering mechanical bells or horns, audio circuits above 25 volts_{RMS}, motor control circuits, or SCR power circuits. Twisted-shielded wiring should be used for EIA-485 circuits that are not contained entirely in conduit.

Functions

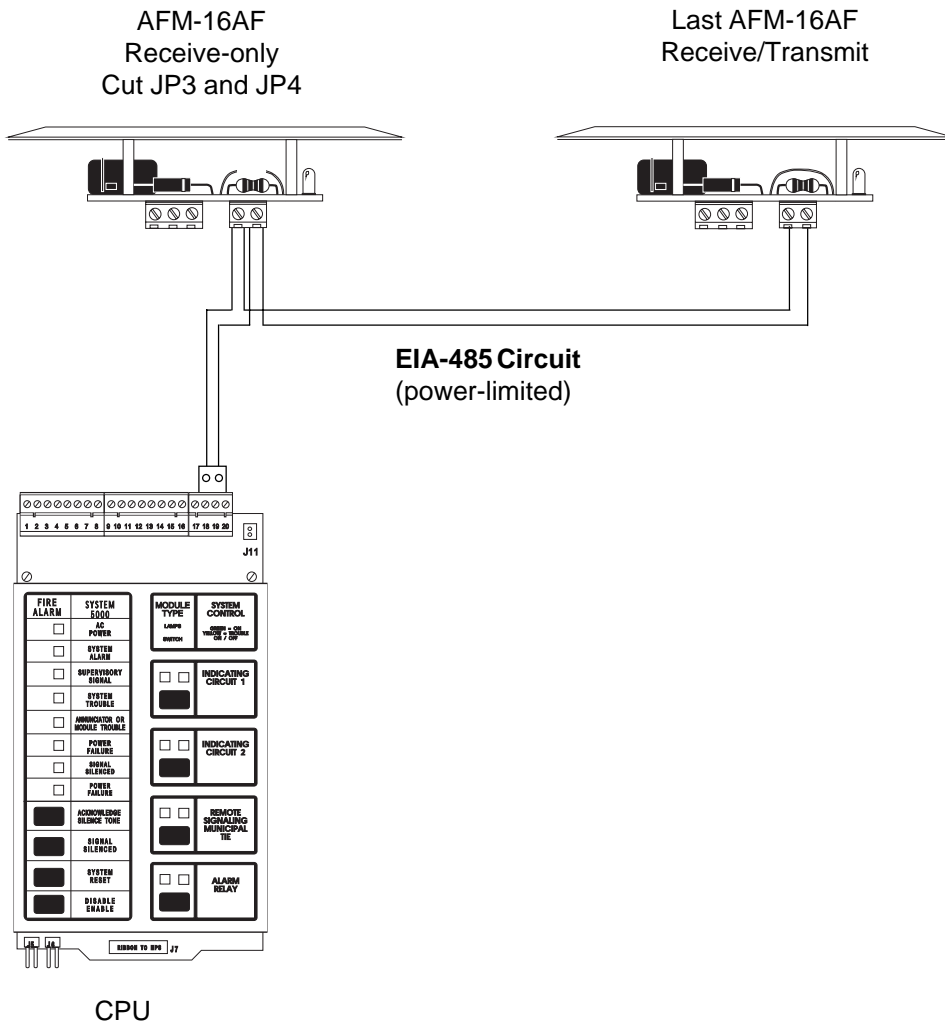
The fire alarm control panel automatically assigns annunciator points to the modules directly to the right of the CPU and outward. Therefore, when installing the system modules, Initiating Zone Modules (IZ-4F or IZ-8F) should be installed in ribbon cable positions immediately next to the CPU (and outward) to permit full annunciation of initiating circuits.



Multiple Annunciators

Multiple AFM-16AFs may be used within power supply limits. The final AFM-16AF on the EIA-485 circuit must be configured for receive/transmit while all other AFM-16AFs on the EIA circuit must be configured for receive-only. See Section 2 for terminal designations and jumper locations.

**Figure 1-2:
Multiple AFM-16AFs**





Section Two: Installation

Installation Summary

- Run the EIA-485 and power circuits out to the location of the annunciator.
- The AFM-16AF can be mounted to four single-gang boxes ganged together. Select an appropriate knockout on the backbox assembly and mount the backbox.
- Wire the backbox to a solid ground, such as a properly grounded metallic cold water pipe.
- Draw all annunciator and power wiring into the enclosure. Do not terminate the shield (if employed) to the backbox .
- Insert the custom display labels into the annunciator.
- As appropriate, cut jumper options on the annunciator. (See Figure 2-3)
- Connect power-limited EIA-485 circuit and power-limited power wiring to the Annunciator Terminal Blocks as illustrated in Figure 2-4.
- Place the annunciator/dress plate assembly into the backbox and secure with four screws.
- Connect the EIA-485 circuit to the CPU as illustrated in Figure 2-4.
- Connect the power loop for the annunciator to the Main Power Supply as illustrated in Figure 2-6.
- Installation of the AFM Annunciator is complete. Program the AFM into the respective CPU and fully test the system.



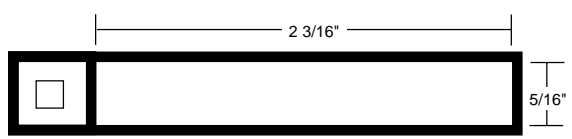
Slide-In Labels

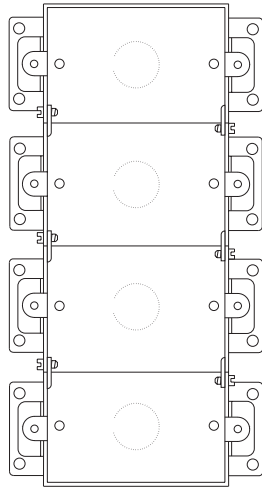
Slide-in labels are contained in the center of this manual. Carefully cut out the labels and insert them into the AFM-16AF by slipping them into the label slots on the back side of the annunciator face plate.

Note: To ensure the best fit, cut directly along the dotted line surrounding each label.

Effective Window Size

The size of the visible portion the label window is $5/16$ " high by $2-3/16$ " across. Using a pitch of 10 characters per inch at six lines per inch, up to three lines of 10 characters each may be typed within this window space. If information is to be typed onto these labels, make a reproduction on a copy machine to use as a practice copy.





Four single-gang electrical boxes connected together.

Figure 2-1: Mounting the Backbox

Select a knockout on the backbox. Mount the backbox and draw all annunciator, and power wiring into the enclosure. Connect the backbox to a solid ground such as a metallic cold water pipe.

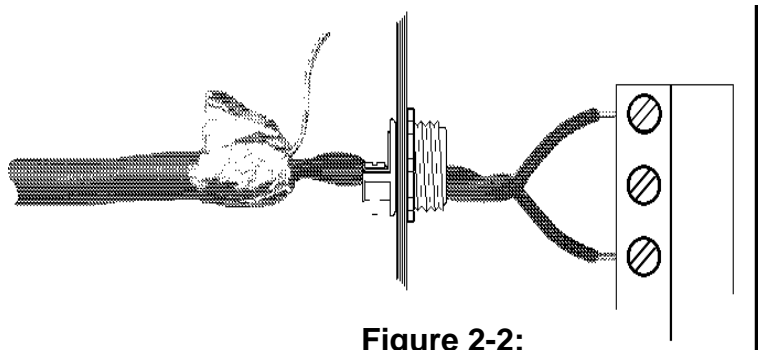
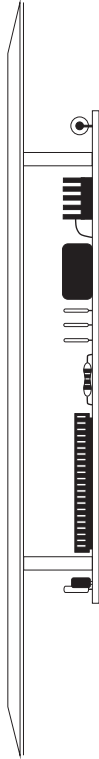


Figure 2-2: Terminating the Shield

The EIA-485 circuit should be wired using a twisted-pair cable having a Characteristic Impedance of approximately 120 ohms. Do not run cable adjacent to, or in the same conduit as, 120-volt AC service, noisy electrical circuits that are powering mechanical bells or horns, audio circuits above 25 volts_{RMS}, motor control circuits, or SCR power circuits. Twisted-shielded wiring should be used for EIA-485 circuits that are not contained entirely in conduit. Do not allow the shield to enter or touch the annunciator enclosure, as illustrated above. The shield should only be terminated at the fire alarm control panel. Wire-nut multiple shields together outside of the cabinet





AFM-16AF
Side View

Jumper JP1 (brown)

Cut this jumper to disable the local piezo from sounding during alarm, trouble, or supervisory activity within the system.

Jumper JP2 (red)

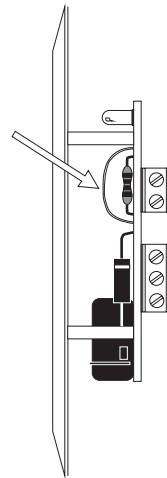
Cut this jumper to display the status of the eight CPU functions in the first eight points on the annunciator.

Jumper JP3 (orange)

Cut this jumper to configure the AFM-16AF for receive-only.

**Figure 2-3:
Annunciator Jumper Options**

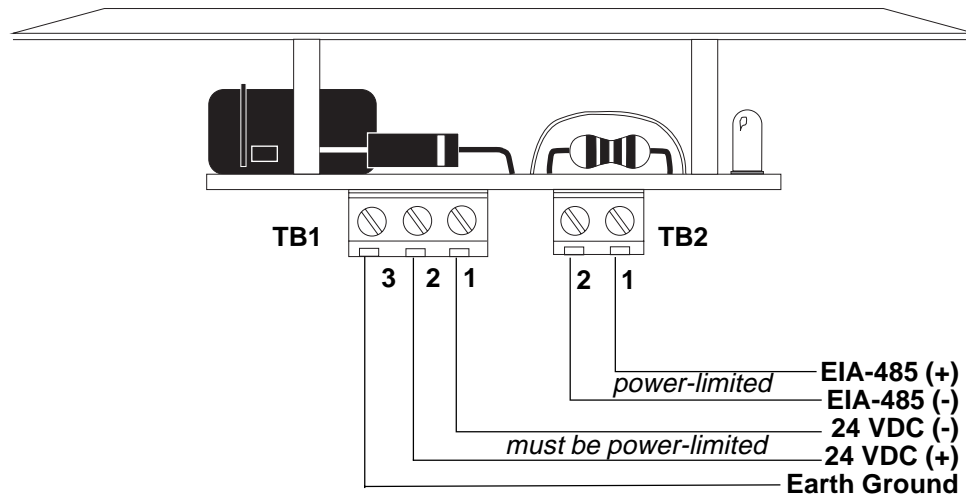
Jumper JP4 (yellow)
Cut this jumper if the AFM-16AF is NOT the last device connected to the EIA-485 circuit.



AFM-16AF
Top View

Figure 2-4: Field Connections

Connect the annunciator and power wiring to the terminal blocks on the back of the AFM-16AF as illustrated below.



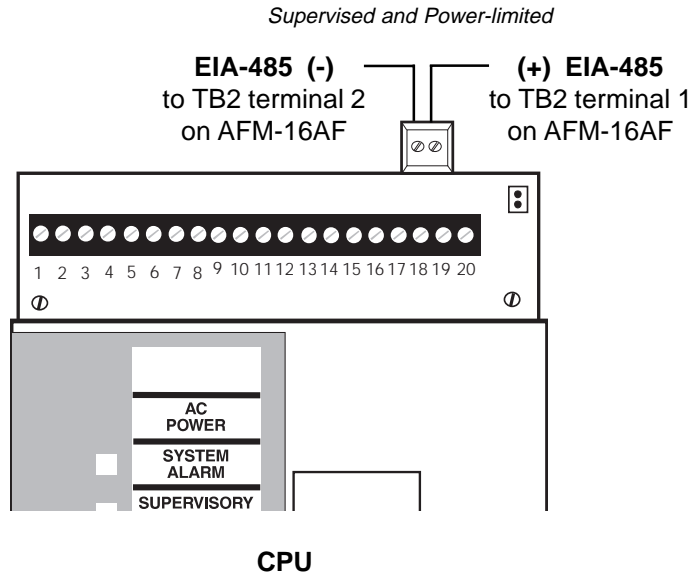
Caution!

Failure to observe proper polarity on these connections may result in damage to the annunciator.

Installation Requirements

The EIA-485 circuit that drives the AFM must be connected to the CPU as illustrated below. Connect the EIA-485 (+) and (-) lines to the CPU terminals.

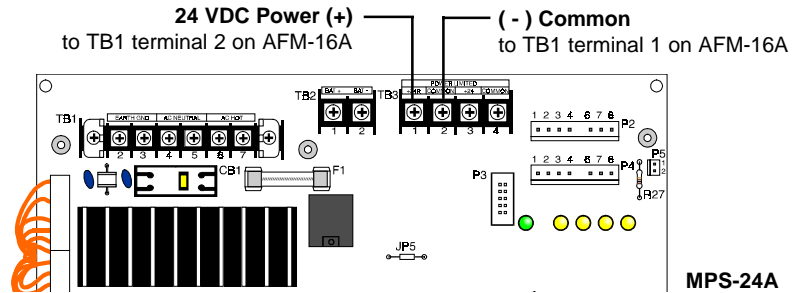
**Figure 2-5:
Connecting the EIA-485 Loop**





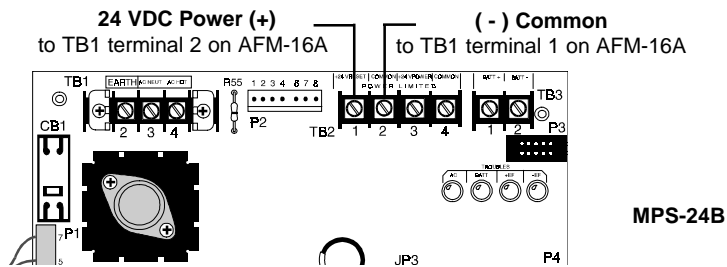
Main Power Supply Connections

The AFM-16AF annunciator can be powered by an MPS-24A or an MPS-24B. This power run to the annunciator need not contain a Power Supervision Relay since loss of power is inherently supervised through communication loss.



**Figure 2-6A:
MPS-24A Main Power Supply :**

Connect the power run for the AFM to MPS-24A TB3 Terminals 1 (+) and 2 (-) (1 amp max) or TB3 Terminals 3 (+) and 4 (-) (3 amps max). The total amount of current drawn from these terminals cannot exceed the above ratings in standby or in alarm.

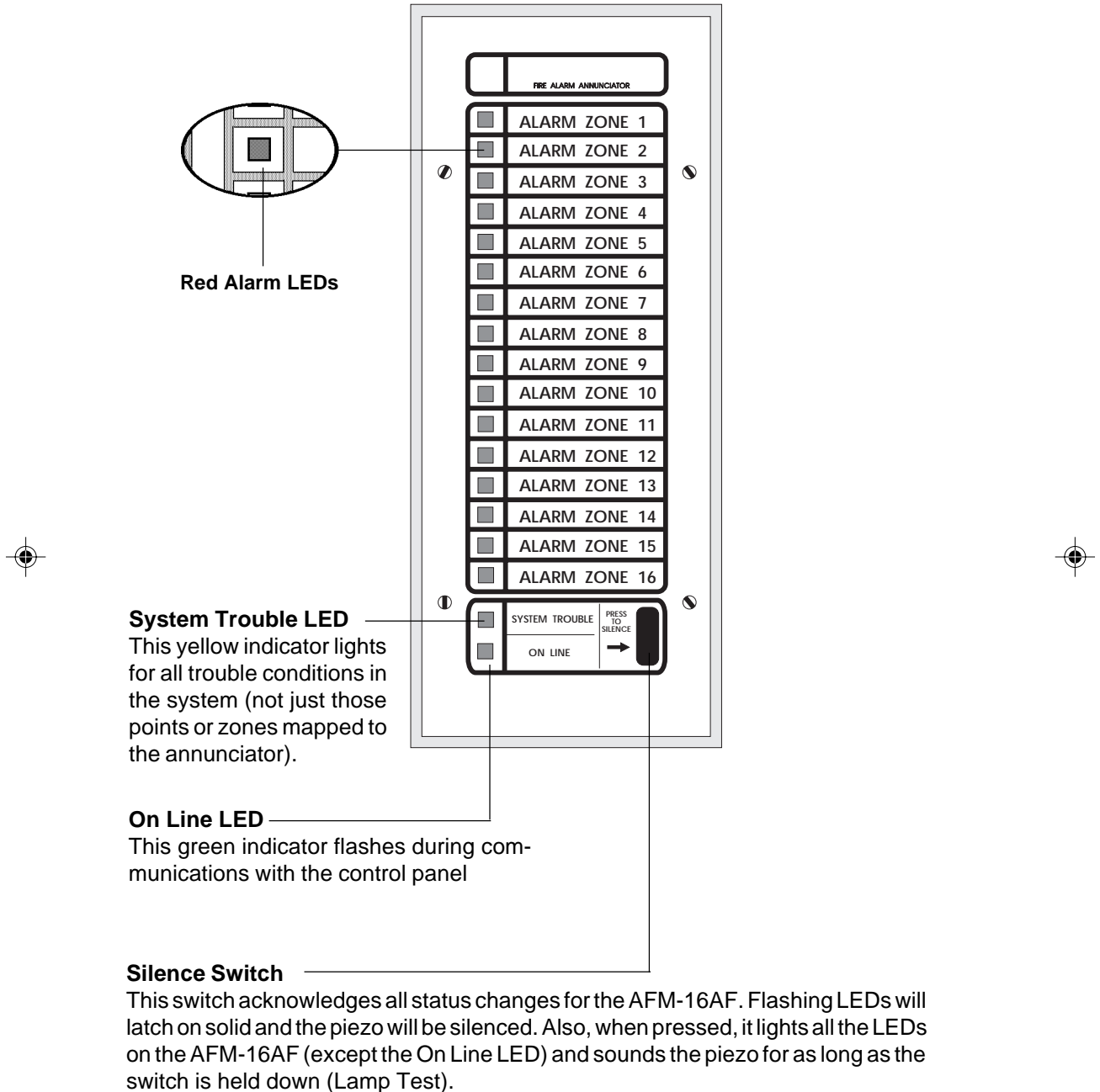


**Figure 2-6B:
MPS-24B Main Power Supply**

Connect the power run for the AFM to MPS-24B TB2 Terminals 1 (+) and 2 (-). No more than 200 mA current can be drawn from these terminals in standby or alarm.



Section Three: Operation



**Figure 3-1:
Operation**

Annunciator Operation

Annunciator points "track" or follow those control panel points they are programmed to annunciate; they do not latch. The table below outlines the annunciation of various circuits and functions. Note: Control Switches marked "not used" will still function as local LAMP TEST or local ACKNOWLEDGE switches for their respective points.

**Table 3-1:
Annunciator Point Functions**

	Circuit Type	Red LED
C P U	ANNUNCIATOR POINT # 1	Indicates System Alarm
	ANNUNCIATOR POINT # 2	not used
	ANNUNCIATOR POINT # 3	not used
	ANNUNCIATOR POINT # 4	not used
	ANNUNCIATOR POINT # 5	Indicates that Notification Circuit 1 has been activated
	ANNUNCIATOR POINT # 6	Indicates that Notification Circuit 2 has been activated
	ANNUNCIATOR POINT # 7	Indicates that the Remote Signaling Municipal Tie has been activated
	ANNUNCIATOR POINT # 8	Indicates that the Alarm Relay has been activated
M O D U L E S	IZ-4F, IZ-8F	Indicates alarm status of circuit
	IC-4F, ICE-4F	Indicates Activation
	CR-4F, CRE-4F	Indicates Activation
	TC-2F, TC-4F	Indicates Activation

Notes:

1) If Jumper JP1 has not been cut, the eight CPU functions will be not be active on the first eight points of the annunciator.

2) These Status LEDs are active only when the CPU has been programmed for "Output Status."



NOTES





**FIRE ALARM
ANNUNCIATOR**

ALARM ZONE 1

ALARM ZONE 2

ALARM ZONE 3

ALARM ZONE 4

ALARM ZONE 5

ALARM ZONE 6

ALARM ZONE 7

ALARM ZONE 8

ALARM ZONE 9

ALARM ZONE 10

ALARM ZONE 11

ALARM ZONE 12

ALARM ZONE 13

ALARM ZONE 14

ALARM ZONE 15

ALARM ZONE 16

SYSTEM TROUBLE	PRESS TO SILENCE
ON LINE	→

**FIRE ALARM
ANNUNCIATOR**

SYSTEM ALARM

IND CKT 1

IND CKT 2

MUNICIPAL TIE

ALARM RELAY

ALARM ZONE 1

ALARM ZONE 2

ALARM ZONE 3

ALARM ZONE 4

ALARM ZONE 5

ALARM ZONE 6

ALARM ZONE 7

ALARM ZONE 8

SYSTEM TROUBLE	PRESS TO SILENCE
ON LINE	→





Cut on dotted line after typing information

**FIRE ALARM
ANNUNCIATOR**

Use these marks to align typewriter when typing two lines per window.

Use these marks to align typewriter when typing one line per window.

SYSTEM TROUBLE
ON LINE

PRESS
TO
SILENCE
→