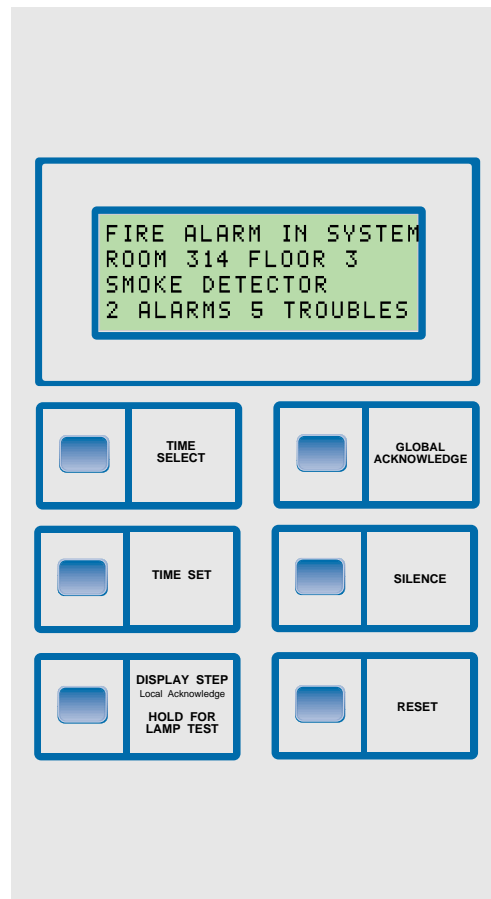


## The PK-LCD-80 Programming Manual

*for NOTIFIER  
Programmable  
Fire Alarm Control Panels*



## Limitations of Fire Alarm Systems

*While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance!*

### **An automatic fire alarm system**

- typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control with remote notification capability can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premise following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

**Smoke detectors** may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire.

**Particles of combustion or "smoke"** from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, or chimneys may inhibit particle or smoke flow.
- Smoke particles may become "cold", stratify, and not reach the ceiling or upper walls where detectors are located.

- Smoke particles may be blown away from detectors by air outlets.
- Smoke detectors may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-Rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. *Heat detectors are designed to protect property, not life.*

**IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the**

*connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.*

**Audible warning devices** such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol or medication. Please note that:

- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercise to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

**A fire alarm system** will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

**Equipment used in the system** may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel.

**Telephone lines** needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

**The most common cause** of fire alarm malfunction is inadequate maintenance. To keep the entire

fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum the requirements of Chapter 7 of NFPA 72 shall be followed. Environments with large amounts of dust, dirt or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional fire alarm installers only. Adequate written records of all inspections should be kept.

## FCC Warning

**WARNING:** This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing device pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his own expense.

## Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radio-electriques depassant les limites applicables aux appareils numeriques de la classe A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

## Installation Precautions

*Adherence to the following will aid in problem-free installation with long-term reliability:*

**WARNING** - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood.

**CAUTION** - *System Reacceptance Test after Software Changes* To ensure proper system operation, this product must be tested in accordance with NFPA 72-1996 Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

**This system** meets NFPA requirements for operation at 0-49° C/32-120° F and at a relative humidity of 85% RH (non-condensing) at 30° C/86° F. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15-27° C/60-80° F.

**Verify that wire sizes are adequate** for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

**Like all solid state electronic devices**, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. *Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.* Consult with the Technical Services Department if any problems are anticipated or encountered.

**Disconnect AC power and batteries** prior to removing or inserting circuit boards. Failure to do so can damage circuits.

**Remove all electronic assemblies** prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

**Do not tighten screw terminals** more than 9 in-lbs. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

**Though designed to last many years**, system components can fail at any time. This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

**Follow the instructions** in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation by authorized personnel.

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# Installation and Startup

## Introduction

This manual describes the use of the LCD-80 Programming Utility. Using this utility, the LCD-80 can be programmed directly from most IBM PC/XT/AT or compatible computers, including lap-tops and portables, equipped with a serial port. LCD-80 program files also can be created and stored on the PC, then downloaded to the panel. *Note: This program will function only with an LCD-80 having software P/N 73323 or P/N 73448 or higher.*

Before attempting to program an LCD-80 with the programming utility, the user should have a knowledge of basic computer use and MS-DOS command structure. After creating or modifying an LCD-80 program, the system must be thoroughly tested with the software installed and operational. For more information refer to the LCD-80 Manual (Document 15037).

## Inventory

The LCD-80 Off Line Programming Utility contains the following:

- Two low density floppy disks, one 5.25" (p/n 75279), one 3.5" (p/n 75280).
- Cable, 9-pin female to LCD-80 RS-232 connection (p/n 75267).
- Adapter, 9-pin male to 25-pin female (p/n 46029).

## Program Installation

You can run the LCD-80 programming application directly either from a floppy disk or from a hard disk drive. To install on a hard drive, create a directory called LCD-80 on the drive. Copy the files from the floppy drive to this directory.

## Getting Started

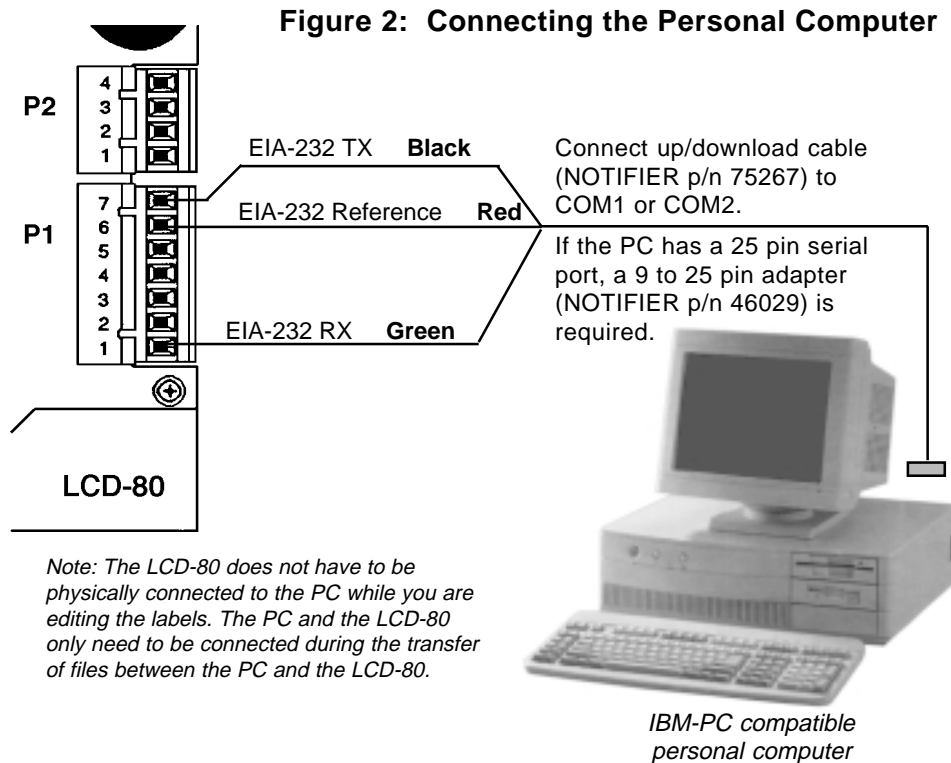
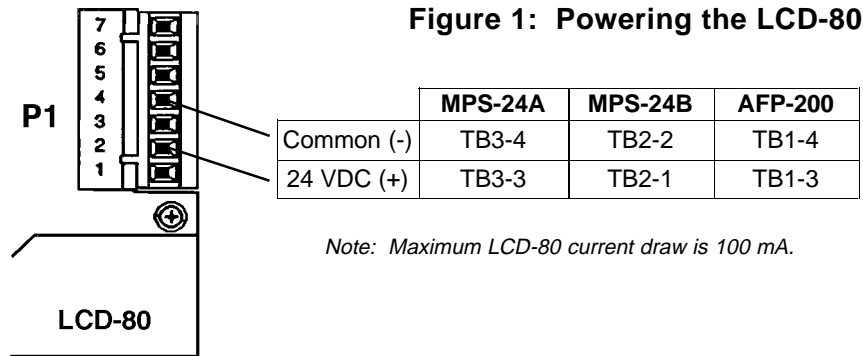
The LCD-80 Programming Utility can be used in two ways:

**On-Line** Connect a PC to the LCD-80 and transfer program files between the two devices.

**Off-Line** Even when a PC is not connected to the LCD-80, the PC can still be used to create or modify program files. The files can be stored on magnetic disk for later transfer to the LCD-80.

### **Connecting an IBM-PC (or compatible) Computer to an LCD-80**

- Connect the LCD-80 to a 24 VDC Power Source as shown in Figure 1.
- Apply power and verify that a Ground Fault is not present. If a Ground Fault is present, it *must* be removed before the PC is connected. Connecting a PC to a system with a Ground Fault may result in damage to the PC, LCD-80 and the Fire Alarm System.
- Remove power and connect the LCD-80 to the PC, as shown in Figure 2.
- Configure the LCD-80 for ACS Mode.
- Verify that the LCD-80 has Software P/N 73323, P/N 73448 or higher.
- Install the PK-1 Program Key on Connector P6 of LCD-80.
- Apply power to the LCD-80 and the PC.
- Transfer information between the PC and the LCD-80.
- Remove power to the LCD-80 and the PC.
- Disconnect the PC and remove the PK-1 Program Key.
- Install the LCD-80.
- Test the Fire Alarm System.



*Note: The LCD-80 does not have to be physically connected to the PC while you are editing the labels. The PC and the LCD-80 only need to be connected during the transfer of files between the PC and the LCD-80.*

LCD-80	Wire Color	EIA Name	9 PIN Connector	25 PIN Connector
1	Green	Tx D	3	2
6	Red	Signal Ground	5	7
7	Black	Rx D	2	3
No Connection	-	DTR	4 (Note 1)	20
No Connection	-	DSR	6 (Note 1)	6

*Note: Pin 4 (DTR) is connected to pin 6 (DSR) in the 9 pin connector housing.*

### Starting the Program

Use DOS to Start-up the LCD-80 utility program named "LCD80.EXE," by typing LCD80 and then pressing the Return key. The following menu should appear:



Figure 3: Menu for Selection of Com Port

Type the number of the COM port you wish to use. After selecting a COM port, the following "Main Menu" will appear on your computer screen.



Figure 4: Main Menu



## Main Menu Options

1) **Display from Disk File** calls an LCD-80 label program stored on disk. If the file is not in LCD-80 format, you will be informed by the message "NOT LCD-80 FILE."

*Note: LCD-80 File is 5341 bytes long. The calculated checksum is 0.*

To abort this function, use the ESC key. When the correct file name is entered on the bottom of screen, the total number of bytes read from the file is displayed. An on-screen menu will appear. You may choose to view or edit the file.

2) **Display From LCD-80** reads labels stored in the LCD-80.

You will be prompted that the process is "COMPLETED" or that an "ERROR" has been detected. When the process is completed, an on-screen menu will appear. You may choose to view or edit the file.

3) **Display Sample File** calls sample labels file stored within LCD80.exe program.

To create new labels, use this selection as a template for your new file. The new file is created by typing over the information displayed from the sample file. After making the new file, remember to give it a new name and then save the file on a magnetic disk.

4) **Copy Codes from Diskfile to LCD-80** downloads program created on PC into LCD-80 memory.

Use this selection to copy files you have stored on disk to an LCD-80. The file is transferred directly without being displayed.

5) **Copy Codes from LCD-80 to Disk File** uploads program stored in LCD-80 memory to PC for editing.

In this option, you will be asked to enter a file name. The codes from LCD-80 memory will be transferred to file without editing or viewing. You will be prompted when that process is "COMPLETED" or that an "ERROR" has been detected.

6) **Display Zone Label from AFP-200/ID-200 File** extracts zone labels from AFP-200/ID-200 file for downloading into LCD-80.

After selecting this option from the main menu, you will be prompted to enter the file name. You can abort this option by pressing the ESC key. After the correct name has been entered, an AFP-200 program stored on disk will be checked for compatibility, otherwise you will receive the message "NOT AFP-200/ID-200 FILE." AFP-200/ID-200 files are created and saved using the PK-200 off-line programming utility.

7) **Exit to DOS** leaves the LCD-80 programming utility.

A) **Change Serial Port** switches ports from COM 1 to COM 2.

## LCD-80 PROGRAMMING

This section discusses use of the LCD-80 Programming Utility to create and/or modify LCD-80 program labels. For additional information about the capabilities of the LCD-80 programming techniques, please refer the the LCD-80 manual.

### Initial Programming

When initially creating an LCD-80 program with the programming utility, select "3) Display Sample File" by typing 3.

### The Submenu

When you choose option 3) *Display Sample File*, the utility will display a submenu (see Figure 5). In this screen, a submenu gives the option of programming the AIM for 20 character messages, 40 character messages, AFP-200 labels. In other screens, the submenu displays the available options for modifying other parameters.

Use the Up and Down arrow keys and the Enter key, or enter the number of your selection on the PC keyboard.



Figure 5: Submenu

After selecting the message format (AIM, 20 character, 40 character, AFP200, select "P" if you are programming Point labels or select "S" if you are programming System labels. See Figure 6.



Figure 6: Point/System Labels

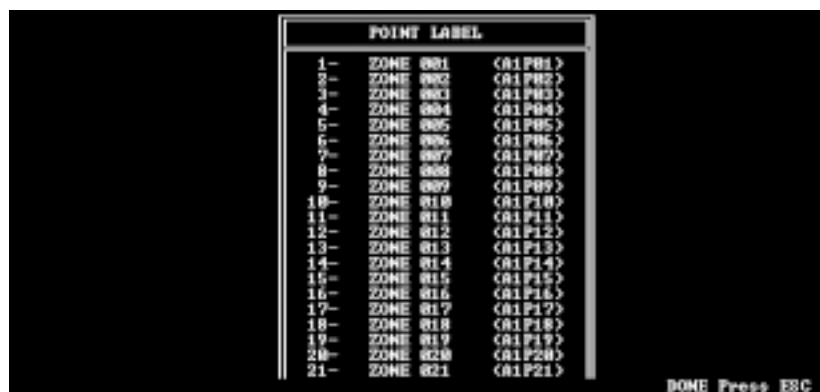


Figure 7A: Point Labels with 20 Character Message

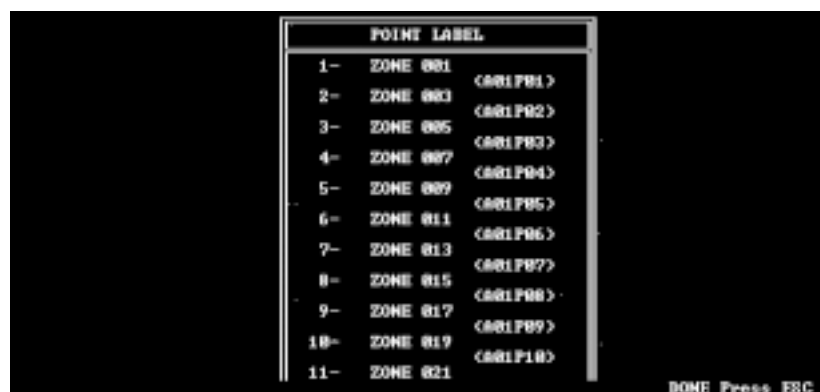


Figure 7B: Point Labels with 40 Character Message



**Figure 7C: System Labels**

#### **Label Editing**

Labels are edited by typing over existing information appearing on your computer screen.

A point label identifies a zone or device, and may be used for messages such as "SUPERVISORY," PRE ALARM," etc. A system label indicates status such as: "ALL SYSTEMS NORMAL."

#### **Screen Navigation**

There is a great deal of information to enter or edit in the screens of the programming utility. To expedite this process, become familiar with the use of the following keys and submenus to navigate through the various fields in each screen.

- |                   |                                                                                                                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Arrow Keys</i> | Use the up, down, left, and right arrow keys to move through the different fields. After you have completed an entry in a field, pressing the right arrow key will move you to the next field. |
| <i>Esc Key</i>    | When you have finished programming a Point Label or System Label screen, pressing the Esc key will bring up submenus.                                                                          |

### **Saving Programs**

After you have finished working in a screen, the application instructs you to press the *Esc* key. Doing this from the System Code screen, for example, brings up Figure 8.

P - POINT LABEL  
S - SYSTEM LABEL  
E - EXIT

P- Point Label  
S- System Label  
E- Exit

Moves you to the Zone Label Code screen for editing.  
Returns user to the System Label screen.  
Choosing Exit brings up another submenu (Figure 9).

P - PRINT  
S - SAVE  
D - DOWNLOAD  
M - MAIN MENU

P- Print

Sends the completed program to a printer attached directly to the PC. *Note: Do not make this choice if a printer is not attached to the PC.*

S- Save

Saves your program to disk. The application will prompt you to name the file. Name the file, press Enter, and the file will be saved to disk.

D- Download

Downloads the program to an LCD-80 connected to the PC. It is recommended that you save the program to disk before down loading it. *Note: Do not make this choice if an LCD-80 is not attached to the PC.*

M- Main Menu

Returns you to the main menu (without saving the program.)

## FILENAMES

When the LCD-80 Programming Utility prompts you to enter a filename you should enter the file location and file name including its extension. The program will use the current drive and current directory unless a location is specified.

### Examples:

AIRPORT : Refers to the file "AIRPORT" in the current drive and current directory.

AIRPORT.JOB : Refers to the file "AIRPORT.JOB" in the current drive and current directory.

C:\LCD80\LABELS\AIRPORT.JOB : Refers to the file "AIRPORT.JOB" in the sub-directory called LABELS that is contained in the directory LCD80 on drive "C."

The names you choose for files and extensions must comply with the following:

- Filename can have a maximum of eight characters.
- Extension can have a maximum of three characters.
- Filename must appear before the extension.
- A period must separate filename from extension.
- Contain only the letters A through Z, the numbers 0 through 9, and the following special characters: underscore (\_), caret (^), dollar sign (\$), tilde (~), exclamation point (!), number sign (#), percent sign (%), ampersand (&), hyphen (-), braces ({}), parentheses ( ), at sign (@), apostrophe ('), and the grave accent (`). No other special characters are acceptable.
- Not contain spaces, commas, backslashes, or periods (except the period that separates the name from the extension).
- Not be the following reserved filenames: CLOCK\$, CON, AUX, COM $n$  (where  $n = 1 - 4$ ), LPT $n$  (where  $n = 1 - 3$ ), NUL, and PRN.

## Editing Programs

Use Main Menu option "1) Display From Diskfile," to call up an existing LCD-80 program stored on disk. The application will prompt you to enter the file name. To make the file available for editing, enter the file name and then press the Enter key.

### Loading Labels from a Disk File

First determine the name and location of file to be loaded.

From the Main Menu, choose "1) DISPLAY FROM DISKFILE."

On the bottom of the screen, a prompt will ask for the name of the file to be displayed. Type in the file name including its extension. If the file does not exist, you will be prompted to enter a new name. You can return to the Main Menu by pressing the "Esc" key.

### Uploading Labels from the LCD-80

Either one of these options can be chosen from the Main Menu:

"2) DISPLAY FROM LCD-80" In Option 2, the codes will be transferred to PC memory. If Process is completed, follow the screen menu, the file could be displayed for editing or viewing.

"5) COPY CODES FROM LCD-80 TO DISK FILE" In Option 5, you will be asked to enter file name, then the codes from LCD-80 memory will be transferred to file without editing or viewing. If the process is completed successfully, you will be given the message "COMPLETED." Otherwise, you will be given the message "ERROR."

During Upload of labels from the LCD-80, a number will be incremented at the bottom of the screen. When you are done editing labels on a screen, press the "Esc" key. You will then see a menu. Choose "Exit" if you wish to reach the menu for choosing "print," "save," or "download."

### Saving Labels to Disk

We recommend saving edited labels to disk prior to printing or downloading. To save the label data, choose "Save" from the menu. You will be asked to type a file name and then press "Enter." While the labels are being saved to disk, a number will be incremented at the bottom of the screen. When the process of saving your file to disk is complete, you should see the message: "Save file filename is complete." Press the "Enter" key to continue.

### Downloading Labels to the LCD-80

Labels could be downloaded to LCD-80 memory by:

- 1) Transferring directly from LCD-80 label program file using Option "4) COPY CODES FROM DISK FILE TO LCD-80"; or
- 2) When LCD-80 program file is displayed on screen: Exit Edit Mode and select "DOWNLOAD".

While the labels are being downloaded to the LCD-80, a number will be incremented at the bottom of the screen. When downloading to the LCD-80 is complete, you should see the message: "DOWNLOAD TO LCD-80 IS COMPLETE."

### Display Zone Label from AFP-200/ID-200 DISK FILE

After selecting this option from main menu, you will be prompted to enter a *filename*. If you do not wish to enter a *filename*, press the Esc key. After entering a valid filename, an AFP-200/ID-200 program stored on disk will be checked to determine if it is an AFP-200/ID-200 file. If it is not, you will be given the message "NOT AFP-200/ID-200 FILE."

*Note: AFP-200/ID-200 file is 10,449 bytes long and the calculated checksum is 0. You can now edit these labels for use with an LCD-80. After editing, the new file can be saved as an LCD-80 file and downloaded to an LCD-80.*

## Default Messages and System Labels

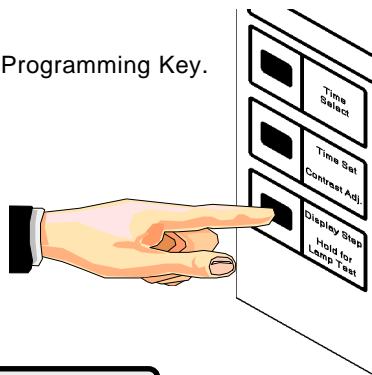
The LCD-80 contains default messages that can be restored (en masse) at any time. These messages can also be edited as needed. Note that any custom messages or labels that were previously entered will be overwritten by the default information and cannot be recovered.

Message	Characters	Text of Default Message
1	40	"FIRE ALARM SYSTEM REMOTE ANNUNCIATOR"
2	20	"ALL SYSTEMS NORMAL"
3	40	"COMMUNICATIONS FAIL"
4	20	"FIRE ALARM IN SYSTEM"
5	20	"TROUBLE IN SYSTEM"
6	20	"RETURN TO NORMAL"
7	20	"ACKNOWLEDGE"
8	20	"SIGNAL SILENCE"
9	20	"SYSTEM RESET"

*AM2020/AFP1010 Note: When the LCD-80 is used in conjunction with an AM2020/AFP1010 combination fire and security panel, the "FIRE" in default messages 1 and 4 must be removed.*

### To restore default messages:

- ✓ If in Program Mode, remove the Programming Key.
- ✓ Insert the Programming Key.
- ✓ Within several seconds after inserting the Programming Key, push in and hold in the DISPLAY STEP switch until the LCD-80 displays the following message:



TRANSFER DEFAULT  
CUSTOM MESSAGES  
TO NONVOLATILE RAM

- ✓ Release the DISPLAY STEP switch and proceed with any additional programming required.

### To restore default point labels:

Use the above procedure with the following exception:

- Push TIME SET to restore 20-character default point labels.
- Push TIME SELECT to restore 40-character default point labels.
- Push GLOBAL ACKNOWLEDGE to restore 20-character default point labels for AIM-200 mode in the System 5000 (Revision 6 software required).



*Ensure that the choice of 20 or 40-character default labels matches the settings on the SIZE SELECT switches SW-5 and SW-6 on the LCD-80.*



Message Number	Conditions under which each message will be displayed.
1	Standard display banner for the LCD-80.
2	Displayed under normal conditions.
3	Displayed when communications between LCD-80 and the control panel have been interrupted.
4	Displayed under all alarm conditions.
5	Displayed under all trouble conditions.
6	<i>Messages 6 through 9 are not displayed on the LCD-80. These messages are sent to a printer connected to the LCD-80.</i>
7	
8	
9	

#### Entering Custom Point Labels

From the Main Menu, select option 1, 2, or 3. Then a menu will appear to give you the choice of editing Point or System Labels.

#### System Labels

Once in Program mode, the LCD-80 waits for commands from the EIA-232 circuit. The LCD-80 screen will display:



## Notes

## Notes

## ***Limited Warranty***

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