



***INTELLIGENT FIRE ALARM  
CONTROL PANEL***

***ENGINEERING  
PROGRAMING MANUAL***

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## INTRODUCTION

This document is designed to aid the user in understanding and gaining familiarity with the 3000 Series fire alarm panel.

The 3000 Series 1-3 panel is a 3 loop panel intended for use with Apollo intelligent detectors, having a maximum of 126 detectors on each loop. The 3 loops are sub-divided into 24 fire zones, which may be spread across all 3 loops.

The system constantly monitors all detectors and wiring. Any rapid changes in the response from a sensor that exceed a predetermined level will cause the panel to go into fault, pre-alarm or fire. A slow change in the output from a sensor will be compensated for in the panel, thus maintaining sensitivity over a wide range of ambient conditions.

The time taken to monitor a full loop of Apollo detectors is approximately 4 seconds; this is a function of the Apollo protocol. To improve the speed of response on the system all 3 loops are polled and processed in parallel.

Each detector must be given a unique address in the range 1 - 126. This is set-up on DIL switches mounted on the detector. Addresses 0 and 127 are not permitted.

Monitoring is provided for various hardware faults. The panel will periodically perform an EPROM sumcheck, if this differs from a previous value, it will be reported.

A count is also kept of the number of times that the panel automatically resets. This value can be examined and cleared using the keypad routines. It is also printed out on each reset message.

## **SYSTEM POWER UP**

There are two different ways that the system will power up, depending on whether the panel is in AUTO LEARN MODE or SYSTEM ACTIVE. If the panel is in SYSTEM ACTIVE mode, then on start-up the LCD screen will display a 3-digit countdown. This allows time for the detectors to initialize and for the lines to charge up. After the countdown has completed, the date and time will be displayed, alongside a SYSTEM ACTIVE message. If the panel is in AUTO LEARN MODE the countdown will be bypassed, and an AUTO LEARN message will be displayed alongside the date and time.

The SYSTEM ON lamp will also provide a constant indication of which mode is selected. It will be flashing if in AUTO LEARN mode or continuously on if in SYSTEM ACTIVE mode.

The printer will also print a reset message.

## **PANEL SWITCHES**

RESET:- Resets the system.

LAMP TEST:- Illuminates all lamps on the system.

ALARM SILENCE:-	In fire conditions, it will silence the bells and sound a pulsing buzzer. Any fire zone lamps that are flashing will go steady, and any subsequent alarms in another zone will flash. In fault conditions, the buzzer will be silenced.
CYCLE DISPLAY:-	Brings up the next alarm into the display.
AUX. ISOLATE:-	Isolates the Auxiliary relays.
ALARM EVAC:-	Sounds all bells on the system.

## FIRE ZONE LAMPS

There are 24 fire zone lamps on the 3000 Series 1-3 panel. These can be configured to illuminate on any combination of detectors, by setting those detectors to the same zone using the keypad routines.

## OTHER LAMPS

FAULT:-	A device has a fault, or there is a hardware fault.
FIRE:-	A device has gone into a fire state.
PRE-ALARM:-	A device has gone into a pre-alarm state.
QUEUE (flashing):-	There are one or more alarms unviewed in the queue.
QUEUE (steady):-	There are one or more alarms in the queue.
SYSTEM ON:-	Flashing in AUTO LEARN mode, constant in SYSTEM ACTIVE.
ALARM FAULT:-	There is a fault on a bell circuit.
SUPPLY FAULT:-	A power supply fault has occurred.
PROC. FAULT:-	There is a processor fault.
DEVICE/ZONE ISOLATE:-	Something is isolated or disabled on the panel.
ALARM EVAC:-	The panel is in evacuated state.

## MULTIPLEX OUTPUT

Apart from the bells and relays being on the multiplex output, the fire zones and the 64 mimic signals are also sent out as part of the multiplex stream.

## INPUT / OUTPUT UNITS

Provision is made for up to 255 I/O units to be connected to the panel. Of these a maximum of 30 can be set-up so that they will operate under any fire condition. The remaining ones may be set-up so that specific devices will operate them. Each device may operate a maximum of 4 different I/O units, from these remaining 225 I/O units.

## RS232 OUTPUTS

There is an RS232 output which is programmed ready for connection to a 3000 Series 1-3 REPEATER. By setting up a panel number in the keypad routines it is possible to use this as the connection a graphics system, via an RS485 converter.

Additionally, there is an output ready for connection to a Management System (see BMS protocol).

## **PANEL MESSAGES**

The messages displayed on the panel fall into 2 categories, keypad messages and system status messages. The system status messages take precedence. The keypad messages are detailed in the SYSTEM PROGRAMMING section of this manual. Following is a list and description of the various system status messages. The status messages will also be placed into the log, and printed out if required.

### **ALARM FAULT**

**ALARM FAULT  
CABLE FAULT OR FUSE BLOWN IN SNDR CCT 1**

The ALARM FAULT and main FAULT lamps will be lit, and a pulsing buzzer will sound

### **LINE FAULT**

**LINE FAULT  
CABLE BREAK OR SHORT CIRCUIT IN LOOP 1**

This fault occurs when there is an open or short circuit on a loop. The main FAULT lamp will be illuminated, and a pulsing buzzer will sound.

### **POWER SUPPLY FAILURE**

**POWER SUPPLY FAULT  
CHECK BATTERY / PRIMARY SUPPLY**

**FAULT**

**EXTERA FAULT  
CHECK ANCILLARY EQUIPMENT**

**POWER SUPPLY FAULT  
REPEATER FUSE FAULT**

**POWER SUPPLY FAULT  
EARTH FAULT, CHECK CABLES FOR EARTH**

The SUPPLY FAULT lamp and the main FAULT lamp will be illuminated and a pulsing buzzer will be sounded.

### **SUMCHECK ERRORS**

**SUMCHECK ERROR  
EPROM SUMCHECK IS INCORRECT**

<b>SUMCHECK ERROR</b> <b>RAM SUMCHECK IS INCORRECT</b>
---

The main FAULT lamp is illuminated, and a pulsing buzzer is sounded.

### UNTRACEABLE CALL POINT

<b>FIRE</b>	<b>DEVICE NOT FOUND</b> <b>UNTRACEABLE CALL POINT</b>
-------------	--

This is a fire condition, the main FIRE lamp will be set on and the bells will go. The call point cannot be traced if it is operated and then immediately reset.

### DETECTOR MESSAGES

<b>FIRE</b>	-	<b>COMPUTER ROOM</b>	-
<b>LOOP: 1</b>	<b>DEVICE:001</b>	<b>ZONE:02 HEAT DET</b>	-

<b>FAULT</b>	-	<b>COMPUTER ROOM</b>	-
<b>LOOP: 1</b>	<b>DEVICE:001</b>	<b>ZONE:02 HEAT DET</b>	-

<b>PRE-ALARM</b>	-	<b>COMPUTER ROOM</b>	-
<b>LOOP: 1</b>	<b>DEVICE:001</b>	<b>ZONE:02 HEAT DET</b>	-

<b>CHANGED</b>	-	<b>COMPUTER ROOM</b>	-
<b>LOOP: 1</b>	<b>DEVICE:001</b>	<b>ZONE:02 HEAT DET</b>	-

<b>REMOVED</b>	-	<b>COMPUTER ROOM</b>	-
<b>LOOP: 1</b>	<b>DEVICE:001</b>	<b>ZONE:02 HEAT DET</b>	-

<b>2 DEV, 1 ADDR</b>	-	<b>COMPUTER ROOM</b>	-
<b>LOOP: 1</b>	<b>DEVICE:001</b>	<b>ZONE:02 HEAT DET</b>	-

The above messages provide the loop, device, fire zone, detector type the reason for the message and the location text for the device.

NOTE: When the 2 Devices on 1 Address fault occurs, the device type will be cleared down, and the analog value will be set to the standby level. This is to prevent any false alarms occurring.

## SYSTEM PROGRAMMING

### GENERAL

Programming the 3000 Series 1-3 alarm panel may be done using either the QWERTY keyboard or the infra-red keypad. All necessary keys are available on both systems. The

keypad routines are made secure by means of a 5-digit access code. The write protect switch must be put into the write enable position for most of the keypad routines, if however this is not done, the routines that require it will give a warning message to the user.

## **ENTRY TO THE KEYPAD ROUTINES**

In its quiescent state the panel will be displaying either the SYSTEM ACTIVE or AUTO LEARN MODE message. To get to the access code entry stage, the user must press the ENTER key. This will cause the following message to be displayed:

**ENTER USER ACCESS CODE. ??????**

The user must then enter the 5 digit access code, pressing enter when finished. If the code is rejected the original SYSTEM ACTIVE or AUTO LEARN MODE screen will be displayed again. If the code is accepted then the screen will display the level of user, and a request to enter a function number.

The user may be of either major or limited access level. Major access allows the user to read and write to all the functions. The limited access user will have facilities made available by the major access user, by means of one of the keypad routines.

## **EXIT FROM THE KEYPAD ROUTINES**

To return the panel to its normal operating mode the user must exit from the keypad routines. This is accomplished on the QWERTY keyboard by pressing the CONTROL and Q keys together. On the remote keypad, the two EXIT keys must be pressed together.

## **FUNCTION NAMES AND NUMBERS**

There are 54 main functions available on the 3000 Series 1-3, with function 1 being split into a further 18 sub-functions, following is a list of those main functions grouped into categories:



**Device Set-up**

Device Configuration Func 1

**Bell Configuration**

Standard / MPX Bells Func 3 Bell Configuration Func 4

Panel Bell Set-up Func 5 Loop Bell Set-up Func 6

Zone Bell Set-up Func 7

**Fire Relay Configuration**

Std / MPX Fire Relays Func 8 Fire Relay Config Func 10

Panel Fire Relay Func 12 Loop Fire Relay Func 14

Zone Fire Relay Func 16

**Fault Relay Configuration**

Std / MPX Fault Relays Func 9 Fault Relay Config Func 11

Panel Fault Relay Func 13 Loop Fault Relay Func 15

Zone Fault Relay Func 17

**Control of Sounder Circuit Controllers**

Alarmtronic / Apollo SCC's Func 50 Pulsing SCC's Func 27

Set-up Apollo SCC's Func 47 Set-up SCC's Func 52

**Control of I/O units**

Set up Slot Table Func 2

**Timer Functions**

Timer Configuration Func 32

**Isolation**

Bell Isolate Func 34 Relay Isolate Func 35

Loop Isolate Func 44 Zone Isolate Func 45

Items Isolated Func 46

**Testing Functions**

Test Bells Func 28 Test Detectors Func 30

Bells on Test Det Func 29 Set Detector LED Func 31

**Initializing Functions**

Initialize RAM Func 37 Sumcheck RAM Func 38

Sumcheck EPROM Func 39 Clear the Log Func 49

Auto Start-up Counts Func 36 Date and Time Func 24

**Printer Functions**

Print of Recent Events Func 22 Print of Dev Configs Func 23

Printer Disable Func 21

**Displaying Panel Configuration**

Display Detector Volts Func 25 Analog/Volt Disp Func 43

Display Device Config Func 42

**Setting Up Limited Access Users**

Limited Access Code Func 18 Ltd Acc Facilities Func 19

**Miscellaneous**

Active/ Auto Learn Mode Func 26 Upload Func 41

Queued Alarms Func 20 Download Func 40

2 Devices to Evacuate Func 33 Company Name Func 51

Set Up Panel Number Func 48 Call Points to Evac Func 53

Display Log on LCD Func 54

**FUNCTION 1 - DEVICE CONFIGURATION**

This function allows the user to set-up all device relevant information for a specific device. Upon entry to the function the user is required to enter a loop and device number. This is

done using the up and down arrow keys to change the loop number, and 0-9 for the device number. The device number will scroll in from the right hand end. When the correct loop and device number have been entered the user should press the ENTER key. The user is then able to access all the device specific routines. The first one displayed in the text information. To change the sub-function use the up and down arrow keys, use ENTER to use the displayed sub-function, and ESCAPE to go back to the loop and device entry stage. To get back to the function number entering stage hit the ESCAPE key again. When picking a sub-function and when that function is accessed, the loop and device number will be constantly visible.

Following is a list of the sub-functions of function 1:

a = Device Isolate	b = Text Information
c = Fire Zone	d = Reporting Status
e = Silent/Non-Silent Bells	f = Device Imm. Evac
g = Set Timer	h = Heat Grade
i = Bell Pattern	j = Fire Relay Pattern
k = Fault Relay Pattern	l = I/O Pointers
m = MPX Bells	n = MPX Fire Relays
o = MPX Fault Relays	p = Dbl Knock Device
q = MPX Signal Number	r = Dbl Knock MPX Signal

### **SUB-FUNCTION a - DEVICE ISOLATE**

A device can be isolated so that at no time will it cause a fire, pre-alarm or fault indication. The DOWN ARROW key is used to toggle the setting between isolated and non-isolated. The ENTER key saves and exits. The facility is also provided so that if the RIGHT ARROW is pressed, a search is made for the next isolated detector on the system. When one is found it will stop and display it. The UP ARROW key will step onto the next detector number.

NOTE: Call points and sounder circuit controllers cannot be isolated.

<b>LOOP 3 DEVICE 001 TYPE : ION DET DEVICE ISOLATED : NO</b>
--

<b>LOOP 3 DEVICE 001 TYPE : ION DET DEVICE ISOLATED : YES</b>
---

### **SUB-FUNCTION b - TEXT INFORMATION**

This routine allows the user to enter the 24 characters of text that are to be displayed and printed when the device goes into alarm. Any alphanumeric keys may be used, and also

any other symbols present on the QWERTY or infra-red keypad. If the text area is filled any subsequent keys pressed will be inserted into the right hand end, resulting in the left hand character being lost. If however, the HOME key has been pressed then characters will be inserted from the left scrolling the rest of the display to the right. If a mistake is made the BACKSPACE key may be used to delete the character to the left of the current cursor position. The RIGHT ARROW may be used to call up the previous device's text. This is useful in an area where there is more than one detector. The UP and DOWN ARROWS will step on to the next or previous device respectively. The DEL key will delete the character at the cursor position. Pressing the \* key will move the cursor to the right hand end of the screen. Pressing ENTER will save the new text and leave the routine, ESCAPE will just leave the routine.

**LOOP 1 DEVICE 001 TEXT INFORMATION**  
\*                    **COMPUTER ROOM**                    \*

### **SUB-FUNCTION c - FIRE ZONES**

This routine will allow the user to set up which of the 24 fire zone lamps will be illuminated when the device goes into fire. A 2-digit number between 0 & 24 must be entered. Any number outside those limits will not be accepted. If 0 is entered this has the effect of clearing down the fire zone. The number is entered in the same manner as the entry of the function number, where the digits will scroll in from the right. When satisfied the user should press ENTER to save the setting, otherwise pressing ESCAPE will exit the routine without saving the new setting. The RIGHT ARROW will call up the previous device's fire zone setting.

**LOOP 1 DEVICE 001 FIRE ZONE INFO**  
**ZONE 03, 0 - 9 ALTER ENTRY, ENTER FINISHES**

### **SUB-FUNCTION d - REPORTING DETAILS**

A device may be set so that it can report an alarm as FIRE, FAULT or PRE-ALARM. The default setting is FIRE, but this can be changed in the routine using the UP and DOWN ARROW keys. The ENTER key will save the new setting and exit the function, and the ESCAPE key will just leave the function.

NOTE: Call Points will always report fire regardless of this setting.

**LOOP 1 DEVICE 001 REPORTS: PRE-ALM**  
**ARROWS CHANGE SETTING, ENTER FINISHES**

**LOOP 1 DEVICE 001 REPORTS: FAULT**  
**ARROWS CHANGE SETTING, ENTER FINISHES**

### **SUB-FUNCTION e - SILENT BELLS**

Each device can be individually configured so that it will or will not ring the bells should it go into alarm. This routine sets up this condition, by using the ARROW keys. As is usual, ENTER will save and exit, whilst ESCAPE will simply exit.

NOTE: Call Points cannot be silenced using this function.

**LOOP 1 DEVICE 001 BELL STATUS: SILENT  
ARROWS CHANGE SETTING, ENTER FINISHES**

**LOOP 1 DEVICE 001 BELL STATUS: NORMAL  
ARROWS CHANGE SETTING, ENTER FINISHES**

### **SUB-FUNCTION f - DEVICE IMMEDIATE EVAC**

A Device can be set-up so that when it goes into alarm it will cause the alarm panel to evacuate. The setting is changed using the ARROW keys, and ENTER will save the setting.

**LOOP 1 DEVICE 001 IMMEDIATE EVAC: YES  
ARROWS CHANGE SETTING, ENTER FINISHES**

**LOOP 1 DEVICE 001 IMMEDIATE EVAC: NO  
ARROWS CHANGE SETTING, ENTER FINISHES**

### **SUB-FUNCTION g - START TIMER**

When a device goes into fire, it is possible to configure it so that the timer will be started. This gives the facility to evacuate the panel after a period set up by function number 32. The setting in this routine is toggled using the UP and DOWN ARROW keys. ENTER will save and exit. ESCAPE will exit. A global facility is also available at function number 32 that will start the timer on any fire.

**LOOP 1 DEVICE 001 WILL START TIMER  
ARROWS CHANGE SETTING, ENTER FINISHES**

**LOOP 1 DEVICE 001 WILL NOT START TIMER  
ARROWS CHANGE SETTING, ENTER FINISHES**

### **SUB-FUNCTION h - HEAT GRADE**

This function applies only to heat detectors, it will have no bearing on the operation of any other device type. It provides the facility to alter the level at which a heat detector will go into fire (and pre-alarm). The temperature may be set at 55, 65, 75 or 85 °C, using the UP and DOWN ARROW keys. ENTER will save the current level and exit, ESCAPE will exit.

**LOOP 1 DEVICE 001 TRIGGERS AT 55 C  
ARROWS CHANGE SETTING, ENTER FINISHES**

**LOOP 1 DEVICE 001 TRIGGERS AT 85 C  
ARROWS CHANGE SETTING, ENTER FINISHES**

### **SUB-FUNCTION i, j, k - BELL AND RELAY PATTERNS**

The 3000 SERIES 1-3 panel has 3 internal bell relays and 3 internal auxiliary relays. The auxiliary relays must be shared between fire and fault outputs. Each device can be set up a bell, fire relay and fault relay pattern to be used if that device goes into alarm. Keys 1 - 3 are used to alter the setting of the appropriate bell or relay. Bells may be set to OFF, CONTINUOUS or PULSING. Relays may be either OFF or CONTINUOUS. ENTER and ESCAPE assume usual actions. For further information on bells and relays, please see section on BELL AND RELAY OPERATION later in this manual.

**LOOP 1 DEVICE 001 BELL PATTERN: - PCC  
1 - 3 CHANGES BELL STATE, ENTER FINISHES**

**LOOP 1 DEVICE 001 FIRE RELAY PATTERN: - C C  
1 - 3 CHANGES RELAY STATE, ENTER FINISHES**

**LOOP 1 DEVICE 001 FAULT RELAY PATTERN: - CC  
1 - 3 CHANGES RELAY STATE, ENTER FINISHES**

### **SUB-FUNCTION I - I/O POINTERS**

Each device can be configured to set up to 4 I/O's, from a slot table of 225, when it goes into alarm. This routine allows the user to set up the pointers to the I/O slot table. On entry to the routine the current setting for pointer 1 is displayed. This may be changed using keys 0 - 9. To move to another pointer the UP and DOWN ARROW keys must be used. Pressing ENTER will save the setting of all 4 pointers not just the one displayed. ESCAPE will exit without saving anything. To clear down a pointer slot 000 must be entered.

**LOOP 1 DEVICE 001 I/O POINTER 1: 001  
0 - 9 CHANGE I/O, ARROWS CHANGE POINTER**

**LOOP 1 DEVICE 001 I/O POINTER 1: 001  
0 - 9 CHANGE I/O, ARROWS CHANGE POINTER**

### **SUB-FUNCTIONS m, n, o - MPX BELLS AND RELAYS**

The alarm panel has a total of 32 MPX Bell signals and 32 MPX Relay signals. The relays are split into a mixture of fire and fault relays. They can be programmed at a device level, so that each detector can give an individual MPX bell and relay pattern. All three sub-functions operate in the same way. There are four screens, each showing the pattern for a block of 8 bells (or relays). An 'X' is placed in the square below the bell (or relay) number when that MPX signal is configured to be set on an alarm. To move to another screen the UP and DOWN ARROW keys must be used. The keys 1 - 8 are used to toggle the setting of the relevant bell. ENTER will again save the setting and exit, with ESCAPE just exiting. For further information on bell and relay operation see the section BELL AND RELAY OPERATION later in this manual.

MPX BELLS	1	2	3	4	5	6	7	8
LP 1 DEV 001			X			X		X

MPX FIRE RLYS	1	2	3	4	5	6	7	8
LP 1 DEV 001			X			X		X

MPX FLT RLYS	1	2	3	4	5	6	7	8
LP 1 DEV 001			X			X		X

#### SUB FUNCTION p - DOUBLE KNOCK DEVICE

This routine allows the user to enter a device that the current device will double knock with. Used in conjunction with sub-function r, 2 multiplex signals can be set when both devices go into fire. Setting the device number to 0 will clear down the double knock device. The loop and device number of the double knock device are entered in the same manner as for entering the device to be configured, i.e. using the UP and DOWN ARROW keys and 0 - 9 keys.

**LOOP 1 DEVICE 001 DOUBLE KNOCKS WITH  
LOOP 2 DEVICE 002 (ARROWS & 0-9 CHANGE)**

#### SUB-FUNCTION q - MPX SIGNAL NUMBER

When a device goes into alarm it can be configured so that it will provide a mpox output. This may be a number between 1 and 64. Enter the number using keys 0 - 9. The ENTER key saves the setting.

**LOOP 1 DEVICE 001 IS ON MPX SIGNAL : 01  
0 - 9 TO CHANGE SIGNAL, ENTER FINISHES**

#### SUB-FUNCTION r - DOUBLE KNOCK MPX SIGNAL No.

The facility is provided so that if a device has a double knock device set-up and both devices go into fire a second MPX signal can be set. This signal is set up in the same manner as the normal MPX signal. If there is no double knock device set-up then the double knock MPX signal can be used as a second standard MPX signal

**LOOP 1 DEVICE 001 DBL KNOCK MPX SIG: 23  
0 - 9 TO CHANGE SIGNAL, ENTER FINISHES**

## FUNCTION 2 - SLOT TABLE

To enable a device to set off a specific I/O when it goes into fire, a slot table is used. There is space for 255 I/O's in the slot table, although the last 30 of these are used as common fire I/O's i.e. operates on any fire. As explained under sub-function 1I, a device may point to a maximum of 4 slots in the table, thus setting the I/O's entered in those slots when the device goes into fire. The configuring of the slot table is done in two stages. On entry to the routine the user must enter the number of the slot to be configured using keys 0 - 9. After ENTER is pressed the user must then set up the loop and device number of the I/O to go into that slot. This is done using the UP and DOWN ARROW keys and 0 - 9 keys. Pressing ENTER again will save the new setting and step on the slot number to be configured. To cancel the setting of an I/O, device number 000 should be entered. Pressing ESCAPE will abort the changes and return the user to the slot number entry stage. Exit using the ESCAPE key again.

**USE KEYS 0 - 9 TO SELECT SLOT NUMBER,  
OR PRESS ENTER TO CONFIGURE SLOT 123**

**SLOT NUMBER 123 SET TO LOOP 1 DEVICE 012  
ARROWS CHANGE LOOP, 0-9 CHANGE DEVICE**

## FUNCTIONS 3, 8 & 9 - STANDARD/MPX BELLS, FIRE AND FAULT RELAYS

The configuration routines for the BELLS, FIRE RELAYS and FAULT RELAYS are very similar and so will be dealt with together. The only real difference between the bell and relay set-ups is that whereas bells can be set to OFF, CONTINUOUS or PULSING, relays may only be set to OFF or CONTINUOUS. The 3000 SERIES 1-3 panel has 3 onboard bell outputs and 3 onboard relays outputs. The relays must be shared between fire and fault settings. Alternatively, the panel may be configured to use MPX outputs. 32 MPX outputs are provided for bells and 32 for relays, the two types of relays must again share. These functions provide the means for setting up which types of bells and relays to use. The UP and DOWN ARROW keys will toggle the setting.

For further information on the operation of bells and relays see the section BELL AND RELAY OPERATION later in this manual.

**PANEL WILL USE STANDARD BELLS  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

**PANEL WILL USE MULTIPLEX FIRE RELAYS  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

**PANEL WILL USE STANDARD FLT RELAYS  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

**FUNCTIONS 4, 10 & 11 - BELL AND RELAY CONFIGURATION**

Bells and Relays can be set according to PRESET, PANEL, LOOP ZONE or DEVICE. These functions will set-up the way in which the bells and relays are operated. To change the configuration, the UP and DOWN ARROW keys are used. ENTER will save the setting as usual and ESCAPE will exit without saving. Note: DEVICE set-ups are done as part of function 1.

For further information on the operation of bells and relays see the section BELL AND RELAY OPERATION later in this manual.

**BELLS ARE CURRENTLY SET TO PRESET MODE  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

**FIRE RELAYS ARE SET TO PANEL MODE  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

**FAULT RELAYS ARE SET TO ZONAL MODE  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

**FUNCTION 5, 12 & 13 - PANEL BELL AND RELAY SET-UP**

Depending on whether the bells (or relays) are in STANDARD or MULTIPLEX mode will depend on which screen is displayed, and therefore which are configured. If the panel is in STANDARD mode, then a screen will be shown depicting the state of the three bells (or relays). These may be altered by pressing keys 1 - 3, which will alter the state of the appropriate bell (or relay). ENTER will save the new set-up, or ESCAPE will abort without saving.

If the user is setting up MPX bells (or relays) then the screen shown will depict the first eight bells (or relays). Their settings will also be shown. To change the state, use keys 1 - 8. To move onto the next 8 MPX bells (or relays) use the RIGHT ARROW. Pressing ENTER will save all the changes that have been made.

For further information on the operation of bells and relays see the section BELL AND RELAY OPERATION later in this manual.

**PANEL BELLS, CURRENT BELL PATTERN: CCP  
1 - 3 ALTERS BELL STATE, ENTER FINISHES**

<b>MPX FIRE RLY</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>PANEL MODE</b>			X			X		

<b>MPX FLT RLYS</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>
<b>PANEL MODE</b>			X		X			X

**FUNCTIONS 6, 14 & 15 - LOOP BELL AND RELAY SET-UP**

Loop mode set-up follows the same principle as the Panel set-up, in that the screen displayed depends on whether the bells (or relays) are in the STANDARD or MULTIPLEX



configuration. In STANDARD mode the screen initially displayed will present the user with the set-up for loop 1. To change the state of the bells ( or relays) keys 1-3 should be used. To move to a different loop the UP and DOWN ARROW keys are used. To leave the routine the ESCAPE key must be used when on the initial screen, pressing ENTER on the second screen will save that particular loops bell ( or relay) state, or pressing ESCAPE at that point will abort the changes. In MULTIPLEX mode, configuring the bells (or relays) is similar to panel mode with the addition of the loop number display. Again the UP and DOWN ARROW keys will change loop number. The RIGHT ARROW key will step onto the next block of 8 bells (or relays). For further information on the operation of bells and relays see the section BELL AND RELAY OPERATION later in this manual.

**LOOP 1 BELLS, CURRENT BELL PATTERN: CCP  
1 - 3 SELECTS BELL, ENTER TO ALTER BELLS**

**LOOP 1 BELLS, CURRENT BELL PATTERN  
1 - 3 TO ALTER BELL SETTING, ENTER SAVES**

MPX FIRE RLY	1	2	3	4	5	6	7	8
LOOP NO: 1			X			X		
MPX FLT RLY	25	26	27	28	29	30	31	32
LOOP NO. 3			X	X				X

## FUNCTIONS 7, 16 & 17 - ZONAL BELLS, FIRE AND FAULT RELAYS

Each of the 24 fire zones can be set-up to give a different bell or relay configuration. These can be set-up in either STANDARD or MULTIPLEX modes.

On entering the set-up routine, for STANDARD mode, the user is required to enter the number of the zone that is to be set-up, this is done by using keys 0 - 9, which will be entered on the right, scrolling the existing number to the left. When the zone number has been chosen, pressing ENTER will allow the user to enter the configuration for the bell or relays. This is done in the same way as described previously for the panel and loop mode. To leave the routine the ESCAPE key must be pressed when on the zone choosing screen. The action of pressing ENTER at the bell (or relay) set-up stage will save the setting. Pressing ESCAPE will abort any changes and return the user to the zone choosing stage. When configuring for MULTIPLEX mode, the user is presented with the usual multiplex configuring screen. Changes are made in the same way as previously described, i.e. using keys 1 - 8, UP and DOWN ARROW keys to change zone, and RIGHT ARROW to change the current block of MPX bells (or relays).

For further information on the operation of bells and relays see the section BELL AND RELAY OPERATION later in this manual.

**BELL CONFIGURATION FOR DET ZONE: 01  
0 - 9 SELECTS ZONE, ENTER TO ALTER BELL PAT**

**ZONE 01 BELLS, CURRENT BELL PATTERN: CPC  
1 - 3 ALTERS BELL SETTING, ENTER SAVES**

MPX FIRE RLY	1	2	3	4	5	6	7	8
ZONE NO: 01			X			X		

<b>MPX FLT RLY</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>
<b>ZONE NO: 01</b>			<b>X</b>	<b>X</b>				<b>X</b>

## FUNCTION 18 - SET UP LIMITED ACCESS CODE

A MAJOR access user has the facility to set up a new access code for the limited users. On entry to this routine, the user is presented with a display showing the current limited access code. Keys 0 - 9 should be used to enter a new code. As each key is pressed, it is inserted at the right hand end of the code, moving all the existing digits one place to the left, therefore the leftmost digit is lost. Pressing ENTER will save the new code, or ESCAPE will simply leave the routine without saving the new code.

**CURRENT LIMITED ACCESS CODE : 12345**  
**KEYS 0 - 9 TO CHANGE CODE, ENTER SAVES**

## FUNCTION 19 - LTD ACCESS USER FACILITIES

Besides being able to set up the limited access code, a major access user can set up which routines the limited access user has access to, and whether that access is read-only or read and write. The routines display consists of the top line displaying the function name, and the bottom line showing what access a limited user has. The function can be changed using the UP and DOWN ARROW keys, the access level is changed using the RIGHT ARROW key. Each press will step on the access setting from "NONE" to "READ-ONLY" to "READ/WRITE" and then back to "NONE". Pressing ENTER will again save all changes made and exit from the function. ESCAPE will just exit.

**LOCATIONAL TEXT INFORMATION**  
**ACCESS: NONE RIGHT ARROW CHANGES**

**ZONAL FIRE RELAYS**  
**ACCESS: READ-ONLY RIGHT ARROW CHANGES**

**2 DEVICES TO EVACUATE**  
**ACCESS: READ/WRITE RIGHT ARROW CHANGES**

## FUNCTION 20 - QUEUING OF DISPLAYED ALARMS

As there is only 1 LCD, a means of displaying more than one alarm must be available. Three ways of achieving this are user-programmable in the 3000 SERIES 1 -3:

- 1) The first alarm (fire, fault or pre-alarm) will be displayed in the LCD. Subsequent alarms will be queued and the QUEUE lamp will pulse to indicate the presence of further alarms. Pressing the CYCLE DISPLAY button will step through the messages, eventually coming back to the original one. The QUEUE lamp will then be lit continuously.
  - 2) The most recent alarm will be placed into the display; i.e. as new alarms occur the display will change and the QUEUE lamp will light. The CYCLE DISPLAY button can still be used to step around all of the current alarms.
  - 3) The display will scroll automatically. With this option selected the display will change to the next alarm in the queue every 3 seconds. The QUEUE lamp will pulse until all alarms have been seen, then it will light continuously.
- Function 20 sets up which display method will be used. The UP and DOWN ARROW keys are used to change the setting. The ENTER key will save the new setting and leave the function, ESCAPE will just leave the function.

**PANEL WILL DISPLAY THE LATEST ALARM  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

**PANEL WILL DISPLAY THE FIRST ALARM  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

**PANEL WILL AUTO SCROLL THE ALARM  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

## **FUNCTION 21 - PRINTER ENABLE / DISABLE**

This function is provided to allow the user to inhibit the printer output without physically removing the printer. When the printer is disabled all output to the printer will be lost, it will NOT be printed when the printer is re-enabled. Disabling the printer will also light the isolate lamp. Changing the state is done using the UP and DOWN ARROW keys. To save and exit use the ENTER key, to just exit use the ESCAPE key.

**PRINTER IS DISABLED  
USE ARROW KEYS TO ALTER, ENTER TO SAVE  
PRINTER IS ENABLED  
USE ARROW KEYS TO ALTER, ENTER TO SAVE**

## **FUNCTION 22 - PRINT OF 200 RECENT EVENTS**

The panel keeps a log of all important events that happen. These events are printed out as they happen, they are also stored in memory. This function provides the ability to print out this log which contains the 200 most recent events. If the printer is disabled then a warning message will be displayed. They are printed out in reverse order, i.e. the most recent event first. The date and time of the event is recorded and printed out also. The events that are recorded are as follows: device fire, device fault, device pre-alarm, device changed, device removed, line faults, alarm faults, supply faults, system reset, alarms silenced, alarms evacuated, test mode entered and exited, something isolated or de-isolated and EPROM or RAM sumcheck error. Confirmation is required before the print will begin.

The print will not start until all the current log messages have first been printed. If confirmation has been given, as soon as the log has been printed the recent event start message will be printed and the log will be printed out.

The recent event print may be terminated at any time, if the user goes into this function during a print it will be displayed that a print is in process, pressing ENTER will terminate the print. The print will also be terminated if there is a fire.

**PRINTER IS DISABLED, EXIT AND CHANGE STG  
PRESS ANY KEY TO LEAVE THE FUNCTION**

**PRINT 200 MOST RECENT EVENTS FUNCTION  
PRESS ENTER TO CONTINUE, EXIT TO QUIT**

**200 RECENT EVENTS ARE BEING PRINTED  
PLEASE WAIT**

**LOG PRINT IS ALREADY IN PROGRESS  
PRESS ENTER TO TERMINATE, OTHERS EXIT**

### **FUNCTION 23 - PRINT OF DEVICE CONFIGURATIONS**

It is possible for the user to print a brief description of the set-up of all the devices that are installed on the system. This function provides that facility. Its operation is similar to the print of recent events, in that it will display a warning if the printer is disabled, it also requires confirmation of the print and can be terminated by entering the function once the print is in progress and pressing ENTER.

The information that is printed as part of the device configuration includes: loop, device and zone numbers, device type, analog value, isolation state and locational text information.

**PRINT DEVICE CONFIGURATION FUNCTION  
PRESS ENTER TO CONTINUE, ESCAPE TO EXIT**

**DEVICE CONFIGURATIONS ARE BEING PRINTED  
PRESS ENTER TO TERMINATE, OTHERS EXIT**

### **FUNCTION 24 - SET UP DATE AND TIME**

This function allows the user to set the current date and time into the panel. This date and time are displayed when the panel is in a quiescent state, and are also put on the printouts and on the log. The function asks the user to enter one section at a time, date, month, year, hours, and minutes. Each time use keys 0 - 9 and press ENTER when finished. If the current reading is correct, nothing should be entered and just pressing ENTER will skip that setting. When all sections have been entered, or skipped, confirmation is requested. If given, by pressing ENTER, the clock will be saved. If ESCAPE is pressed the function will be left without saving anything. Any other key will enter the routine again.

**ENTER DAY : 15 (ENTER KEY SKIPS ENTRY)**  
**CURRENT SETTING: ?? ??? ? ??:??**

**ENTER MONTH : 08 (ENTER KEY SKIPS ENTRY)**  
**CURRENT SETTING: 15 ??? ? ??:??**

**ENTER YEAR : 70 (ENTER KEY SKIPS ENTRY)**  
**CURRENT SETTING: 15 AUG ? ??:??**

**ENTER HOUR : 12 (ENTER KEY SKIPS ENTRY)**  
**CURRENT SETTING: 15 AUG 70 ??:??**

**ENTER MINUTES : 32 (ENTER KEY SKIPS ENTRY)**  
**CURRENT SETTING: 15 AUG 70 12:??**

**ENTER CONFIRMS, ESC QUIT, OTHERS SET DATE**  
**CURRENT SETTING: 15 AUG 70 12:32**

## **FUNCTION 25 - DISPLAY DEVICE POPULATION & VOLTAGE**

This function provides the user with the means to view the analog output from any detector on the system, and to see how many detectors are on each loop. The output can be viewed as either an analog count or as a converted voltage, this depends on the setting of function 42. On entry to the routine, it is set to look at loop 1 device 1. The user may change device numbers by using keys 0 - 9, which will scroll in digits from the right hand end. Loops can be changed using the UP and DOWN ARROW keys. When the loop and device have been set up, the function will display the current output value from the detector, along with the device type. This will be constantly updated from then on, until another detector is chosen, or ENTER or ESCAPE are pressed and the function finishes. The RIGHT ARROW key will increment the device number and display that device's analog output.

**NO OF DEVS: LP 1=004 LP 2=001 LP 3=001**  
**LP 1 DEV 001 TYPE: CALL POINT 0.80V**

**NO OF DEVS: LP 1=004 LP 2=001 LP 3=001**  
**LP 1 DEV 001 TYPE: CALL POINT 016 CNTS**

## **FUNCTION 26 - ACTIVE/AUTO LEARN MODE**

The panel can be set into 2 different modes, ACTIVE and AUTO LEARN modes. As their names suggest, AUTO LEARN mode should be used while the panel is being installed,

whilst ACTIVE should be used once the system is fully functional. The only difference of operation between the 2 modes is that in AUTO LEARN mode detectors may be changed, inserted and removed without causing alarms and without being put into the log. The SYSTEM ON lamp will also flash in INSTALLATION mode.

**PANEL IS IN ACTIVE MODE  
ARROW KEYS TO ALTER, ENTER TO SAVE**

**PANEL IS IN AUTO LEARN MODE  
ARROW KEYS TO ALTER, ENTER TO SAVE**

### **FUNCTION 27 - PULSING / NON-PULSING SCC'S**

The Sounder Circuit Controllers fitted to the system can be instructed to pulse when they are put into alarm. This function provides that facility. The SCC's cannot be individually set. Either they all pulse or none of them pulse. The setting is changed using the UP and DOWN ARROW keys, with ENTER performing a save of the setting and exiting.

**APOLLO SOUNDER MODULES WILL PULSE  
ARROW KEYS TO ALTER, ENTER TO SAVE**

**APOLLO SOUNDER MODULES WILL NOT PULSE  
ARROW KEYS TO ALTER, ENTER TO SAVE**

### **FUNCTION 28 - TEST BELLS**

This function provides the test facility of being able to sound the bells at periodic intervals. The bells will be sounded for 1 second in every 10 seconds. This will continue for 20 minutes as a maximum after which it will turn off. The user can also turn off the test at anytime. If a fire arises, this will also cause it to end. The ENTER key is used to turn the test on or off. The message is still displayed until the ESCAPE key is pressed and the function exits.

**THE TEST BELLS FUNCTION IS OFF  
PRESS ENTER TO TURN ON/OFF, ESC QUILTS**

**THE TEST BELLS FUNCTION IS ON  
PRESS ENTER TO TURN ON/OFF, ESC QUILTS**

### **FUNCTION 29 - SOUND BELLS ON TEST DETECTOR**

The testing of detectors can be configured so that the bells may or may not be sounded. This function allows the user to turn this facility on or off as required. Changing the setting is accomplished using the UP and DOWN ARROW keys. ENTER will save the setting and exit. ESCAPE will just exit.

**BELLS ARE NOT SOUNDED FOR TEST DET  
ARROW KEYS TO ALTER, ENTER TO SAVE**

**BELLS ARE SOUNDED FOR TEST DET  
ARROW KEYS TO ALTER, ENTER TO SAVE**

### **FUNCTION 30 - TEST DETECTORS**

The test detectors function provides the facility to ensure that all the detectors on the system are operating correctly. Operation of a detector that is involved in the test will bring on its LED and if the bells are configured to sound, will operate the bells for 1 second. A message will also be printed, which will give details of the loop and device number, zone number, device type and device text information.

Only 1 loop can be set into test detectors at a time, the remaining 2 loops still perform as usual. The UP and DOWN ARROW keys are used to change which loop is selected. Pressing ENTER will turn the test either on or off. Once the test is started it is no longer possible to move the other loops. Pressing ESCAPE will leave the function, keeping the panel in its current state.

**LOOP 1 TEST DETECTORS IS OFF  
ARROWS ALTER LOOP. ENTER ALTERS SETTING**

**LOOP 1 TEST DETECTORS IS ONN  
ARROWS ALTER LOOP. ENTER ALTERS SETTINGS**

**LOOP 2 TEST DETECTORS IS OFF  
ARROWS ALTER LOOP. ENTER ALTERS SETTING**

**LOOP 3 TEST DETECTORS IS OFF  
ARROWS ALTER LOOP. ENTER ALTERS SETTING**

### **FUNCTION 31 - SET DETECTOR LED**

As an additional test facility, it is possible to illuminate the LED of an individual detector. This function allows the user to set up the loop and device number, and then set the LED on. Setting the device number to 000 will turn off all the detector LED's. The loop is configured using the UP and DOWN ARROW keys, the device is set up using keys 0-9. Pressing ENTER will set the LED of the displayed detector. The LED will be extinguished when a different detector is set up and the ENTER key is pressed to set that LED. The ESCAPE key is used to exit the routine, this will also have the effect of extinguishing the LED.

**SET LED FOR DETECTOR ON LOOP 1 DEV 001  
0 - 9 & ARROWS ALTER DET. ENTER SETS LED**

## FUNCTION 32 - TIMER CONFIGURATION

The timer in the panel that is used for delayed evac purposes can be set to give a wide range of delays. The keys 0 - 9 should be used to change the length of delay. The UP ARROW when pressed will toggle the unit of the duration between seconds and minutes. Thus the timer has 2 ranges, 0 - 99 seconds and 0 - 99 minutes. The DOWN ARROW changes the operating mode of the timer. There are 3 different states. Firstly, the timer can be non-operating, which means it will not be started under any circumstances. It can also be set so that specific devices can set the timer going. See sub-function 1f. Lastly the timer can be in global operating mode, which means that any fire will start the timer. ENTER will save the setting and exit. ESCAPE will exit from the routine.

**TIMER DURATION=01 SECS USE :0-9 & UP ARR  
GLOBAL OPERATING MODE USE: DOWN ARR**

**TIMER DURATION=99 MINS USE :0-9 & UP ARR  
DEVICE OPERATING MODE USE: DOWN ARR**

**TIMER DURATION=99 MINS USE :0-9 & UP ARR  
NON-OPERATING MODE USE: DOWN ARR**

## FUNCTION 33 - 2 DEVICES TO EVACUATE

The panel may be set-up so that if any 2 devices go into fire then the panel will evacuate. This function sets that the condition if required. The setting is changed using the UP and DOWN ARROW keys. The ENTER key will save and exit from the routine. ESCAPE will simply exit.

**2 DEVICES GOING INTO FIRE WILL NOT EVAC  
ARROW KEYS TO ALTER, ENTER TO SAVE**

**2 DEVICES GOING INTO FIRE WILL EVAC  
ARROW KEYS TO ALTER, ENTER TO SAVE**

## FUNCTION 34 - BELL ISOLATE



This function will allow the user to isolate either the STANDARD or MPX bells depending on which mode the user is in. If using STANDARD bells, the user will be presented with a display showing the isolation state of all 3 bells. To change these settings, keys 1-3 are used. If using the MPX bells, the user will be shown the isolation states of the first 8 MPX bells. Keys 1-8 are used to change the state of each of the bells. To see another block of 8 bells the UP and DOWN ARROW keys should be used, keys 1-8 are then used again to change the state of the isolations. Pressing ENTER will save all bell isolation states. ESCAPE will abort without saving.

<b>BELL ISOLATE</b>	<b>BELL NO</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>1 - 3 TO CHANGE ISOL STATE</b>		<b>X</b>		<b>X</b>

<b>MPX BELLS</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>ISOLATE STATE</b>			<b>X</b>			<b>X</b>		<b>X</b>

### FUNCTION 35 - RELAY ISOLATE

The relay isolate function works in exactly the same way as the bell isolate, only isolations obviously affect the relays. Although fire and fault relays can be set up for the system they are the same physical relays, therefore isolating a relay will isolate it for both fire and fault conditions. Keys are used the same as for bell isolations. In STANDARD mode 1-3 will change state, ENTER saves, ESCAPE exits. In MPX mode 1-8 will change the state of the displayed block, UP and DOWN ARROWS change the displayed block, ENTER saves, and ESCAPE exits.

<b>RELAY ISOLATE</b>	<b>RELAY NO</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>1 - 3 TO CHANGE ISOL STATE</b>		<b>X</b>		<b>X</b>

<b>MPX RELAYS</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>ISOLATE STATE</b>			<b>X</b>			<b>X</b>		<b>X</b>

### FUNCTION 36 - AUTO START-UP COUNTS

The 3000 SERIES 1-3 panel has a hardware watchdog, which will automatically reset the panel should the software 'lock-up'. A count of the number of times that this happens is kept, and this routine allows the user to check it, and clear it if necessary. The number of start-ups is displayed and if the user wishes to clear the count. ENTER should be pressed, after which the program will exit. If ESCAPE is pressed then the function will end without clearing down the start-up count.

<b>AUTO START-UP COUNT = 000</b>
<b>HIT ENTER TO CLEAR COUNT, ESC TO EXIT</b>

### FUNCTION 37 - INITIALIZE THE RAM

This routine will clear all the customer, switch-protected RAM to set of initial values, e.g. text entries will be set to all spaces, fire zones set to 0, etc. Care should be taken when using this function as clearing the RAM will result in any information stored there being permanently destroyed. A warning is displayed on entry to the routine, then confirmation is required by the user pressing ENTER, pressing ESCAPE will exit the routine without initializing the RAM. The RAM will be sumchecked after it has been initialized.

**\*\*\*WARNING\*\*\* INITIALIZING RAM DESTROYS  
SETTINGS. ENTER TO CONFIRM, ESC QUILTS**

**THE RAM HAS BEEN INITIALIZED  
PRESS ANY KEY**

### **FUNCTION 38 - SUMCHECK RAM**

This routine is used to enforce a sumcheck on the RAM. Most times this will not be necessary as any function that writes to the RAM, performs a sumcheck, also the initialization sumchecks the RAM. On entry to the routine the user is required to provide confirmation that a sumcheck is required. This is done by pressing ENTER, after which the RAM will be sumchecked. If ESCAPE is pressed the routine will abort.

**PRESS ENTER TO SUMCHECK THE RAM  
OR ESC TO EXIT WITHOUT SUMCHECKING**

**THE RAM HAS BEEN SUMCHECKED  
PRESS ANY KEY  
FUNCTION 39 - SUMCHECK EPROM**

When a new microprocessor is put in the panel, or if the RAM has been initialized, then a new EPROM sumcheck must be made. This function provides that facility. Confirmation is requested, which may be given by pressing the ENTER key. ESCAPE should be used to abort without sumchecking the EPROM.

**PRESS ENTER TO SUMCHECK THE EPROM  
OR ESC TO EXIT WITHOUT SUMCHECKING**

**THE EPROM HAS BEEN SUMCHECKED  
PRESS ANY KEY**

### **FUNCTION 40 - DOWNLOAD**

The download function allows the user the ability to configure the panel remotely, using the 'LOADER' package on a PC. The information set-up can then be transmitted to the panel, thus setting the panel up. On entry to the routine the user is asked to set up the communications link, and confirm the request to download. The link should be set-up as shown below. Once confirmed the panel will display that a download is in progress. The download should then be started from the PC. Pressing any key on the panel at this stage will force an exit from Test Mode. If the user endeavors to alter the set-up of the panel during download the results will be unpredictable. The clock will not be updated during a download.

**DOWNLOAD OF CUSTOMER DETAILS, SET UP COMMS  
LINK AND PRESS ENTER. ESC QUILS**

**DOWNLOAD IN PROGRESS  
PLEASE WAIT**

**DOWNLOAD SUCCESSFUL, CHKSUMS AGREE  
PRESS ANY KEY**

**DOWNLOAD WAS A FAILURE, CHKSUM ERROR  
CHECK COMMS LINK AND TRY AGAIN**

#### **FUNCTION 41 - MEMORY UPLOAD**

The upload function is the complement of the download. It provides a means of sending the current settings to the 'LOADER' package running on a PC. The link should be set-up as shown previously under function 40. When this has been done, pressing ENTER on the 3000 SERIES 1-3 panel will begin the upload procedure. NOTE: The panel ceases to function during this period, i.e. no fire detection is taking place. The panel will automatically send all the customer settings, and will then finish by sending the checksum byte. Once this has been done a completed message will be displayed and the panel will return to its normal operating mode.

**MEMORY UPLOAD. SET UP COMMS LINK, PRESS ENTER TO  
CONFIRM, THEN WAIT. ESC QUILS.**

**UPLOAD COMPLETED  
PRESS ANY KEY**

#### **FUNCTION 42 - DISPLAY DEVICE CONFIGURATION**

This function provides an easy means of displaying all the device information that is entered using function 1. On entry to the routine the user is required to enter a loop and device number. This is done using the UP and DOWN ARROW keys to change the loop, and keys 0-9 to change the device number. Pressing ENTER will start the examination of that device. Pressing ESCAPE will exit the function.

Once ENTER is pressed the user is presented with a screen displaying the loop and device number selected along with that device's text information and fire zone number. The UP and DOWN ARROW keys will change the screen so that other information can be viewed. The device information is split into 7 screens. The RIGHT ARROW key will step on to look at the next device.

**DISPLAY CONFIG FOR LOOP 1 DEVICE 001  
ARRS ALTER LP, 0-9 DEVICE, ENTER SELECT**

**LOOP: 1 DEVICE: 001 FIRE ZONE: 01  
TEXT: - COMPUTER ROOM -**

**LOOP: 1 DEVICE: 001 FIRE ZONE: 01  
BELL STATUS: NORMAL IMMED EVAC: NO**

**LOOP: 1 DEVICE: 001 OPERATES TIMER: YES  
HEAT GRADE: 55C MPX SIGNAL NO: 02**

**LOOP: 1 DEVICE: 001 I/O PTR 1: 012  
I/O PTR 2: 024 I/O PTR 3: 036 I/O PTR 4: 048**

**LOOP: 1 DEVICE: 001  
DOUBLE KNOCK DEV: LOOP: 1 DEVICE: 003**

**LOOP: 1 DEVICE: 001 BELL PATTERN: PCP  
FIRE RLY PAT: C-C FAULT RLY PAT: CCC**

**LOOP: 1 DEVICE: 001 ISOLATED: NO  
DOUBLE KNOCK MPX SIG NO: 32**

### **FUNCTION 43 - ANALOG / VOLTAGE DISPLAY**

This function provides the set-up for function 25. It configures whether the detector's analog value should be displayed as counts or as a voltage. The UP and DOWN ARROW keys are used to alter the configuration. ENTER will save and exit, ESCAPE will abort.

**DEVICE DISPLAYS STATUS AS VOLTAGE  
ARROWS ALTER SETTING, ENTER TO SAVE**

**DEVICE DISPLAYS STATUS AS ANALOG VALUE  
ARROWS ALTER SETTING, ENTER TO SAVE**

### **FUNCTION 44 - ISOLATE LOOP**

It is possible to isolate an entire loop of detectors using this function. This will prevent any detectors, other than call points, within that loop from putting the panel into fire. Sounder Circuit Controllers are also non-isolatable. As a side effect, any fire zones that are totally within the isolated loop will also be displayed as being isolated. The screen displayed when the function is entered will display the current isolate state of all the loops. these states may be unchanged using keys 1 - 3. Pressing ENTER will save the new isolate states. ESCAPE will exit leaving the isolations as they were.

<b>ISOLATE LOOP</b>	<b>1</b>	<b>2</b>	<b>3</b>
		<b>X</b>	

**FUNCTION 45 - ISOLATE ZONE**

Apart from isolating devices and loops it is also possible to isolate fire zones. A zone may only be isolated once it has been set-up, i.e. at least one device has been set to that fire zone. The display will show 8 fire zones at a time. To alter the isolate state of one of them, use keys 1-8. To change to a different block of 8 fire zones the UP and DOWN ARROW keys should be used. Pressing ENTER will save the new isolate state, ESCAPE will exit without saving.

ZONAL ISOLATE	1	2	3	4	5	6	7	8
---------------	---	---	---	---	---	---	---	---

ZONAL ISOLATE	9	10	11	12	13	14	15	16
---------------	---	----	----	----	----	----	----	----

ZONAL ISOLATE	17	18	19	20	21	22	23	24
---------------	----	----	----	----	----	----	----	----

**FUNCTION 46 - ITEMS ISOLATED**

This function provides the user with a simple means to determine what has been isolated on the panel. On entry to the routine, it will display a screen showing the number of loops, zones, devices, bells, and relays that have been isolated. Pressing any key will exit the routine.

<b>LOOP: 1 ZONE: 02 DEV: 142 BELL: 0 RELAY: 2</b> <b>NO. OF ITEMS ISOLATED. PRESS ANY KEY</b>
--

**FUNCTION 47 - SET UP SOUNDER CIRCUIT CONTROLLERS**

It is possible to set the way in which Sounder Circuit Controllers will operate. The function works in a loop oriented manner. For each loop the user can configure which SCC's will operate, e.g. if an alarm occurs on loop 1 the user can set it up so all SCC's on loops 1 and 2 will operate, but nothing on loop 3. On entry to the routine the user is shown a display of the set-up for loop 1 alarms. To change which SCC's will operate keys 1-3 are used. To alter the loop use the UP and DOWN ARROW keys. ENTER will save all the new settings. ESCAPE will exit without saving.

<b>SNDR CCT CONTRLER LOOP 1 SET-UP</b>	<b>  1   2   3  </b>
--	----------------------

<b>ARROWS ALTER LOOP, 1-3 SETTING</b>	<b>  X   X    </b>
---------------------------------------	--------------------

<b>SNDR CCT CONTRLER LOOP 2 SET-UP</b>	<b>  1   2   3  </b>
<b>ARROWS ALTER LOOP, 1-3 SETTING</b>	<b>    X    </b>

<b>SNDR CCT CONTRLER LOOP 3 SET-UP</b>	<b>  1   2   3  </b>
<b>ARROWS ALTER LOOP, 1-3 SETTING</b>	<b>  X   X   X  </b>

## FUNCTION 48 - SET PANEL NUMBER

When using the 3000 SERIES 1-3 panel in conjunction with the graphics system, it is necessary to set-up a panel number. This function allows the user to do that. The number is altered using the UP and DOWN ARROW keys. ENTER saves, ESCAPE exits. Panel number 0 is used when the panel will not be used with IMPACT.

<b>PANEL NUMBER FOR PC REPEATER: 03</b>
<b>ARROWS ALTER PANEL NO, ENTER SAVES</b>

## FUNCTION 49 - CLEAR THE LOG

At times the user may wish to empty the log of all recent events, this function provides that facility. Confirmation of the clearing is requested on entry to the routine. This is given by the user pressing ENTER. Pressing ESCAPE will exit the routine without clearing the log. If it is confirmed the log will be cleared down, a message indicating this will be displayed.

<b>PRESS ENTER TO CLEAR DOWN THE LOG, OR</b>
<b>ESCAPE TO EXIT WITHOUT CLEARING THE LOG</b>

<b>THE LOG HAS BEEN CLEARED</b>
<b>PRESS ANY KEY</b>

## FUNCTION 50 - APOLLO SOUNDERS

This function allows the user to configure the panel to use either the Apollo Sounder Circuit Controllers or the Loop Sounders. On entry to the routine the user is presented with a display showing the current setting. The UP and DOWN ARROW keys are used to toggle the setting. The ENTER key will save the setting and exit, the ESCAPE key will exit.

<b>PANEL WILL USE APOLLO SNDR CCT CONTRLR</b>
<b>USE ARROWS TO ALTER, ENTER SAVES</b>

<b>PANEL WILL USE LOOP SOUNDERS</b>
<b>USE ARROWS TO ALTER, ENTER SAVES</b>

## FUNCTION 51 - SET UP COMPANY NAME

This function allows the user to set-up the company name, which is used on the printer when a reset message is printed. The name may be a maximum of 24 characters in length. The keys used to edit the name are the same as those used in sub-function 1b. Please see sub-function 1b for details of entering the name.

<b>COMPANY NAME</b>	
* <b>ALARMTRONIC LTD</b> *	

## FUNCTION 52 - LOOP SOUNDER SET-UP

The Loop Sounders are set-up on a zonal basis. Each fire zone is capable of setting up a pattern for the possible 96 sounders on the system. The sounders can be set off, continuous or pulsing. Continuous will override a pulsing setting. The sounders will be set-up in batches of 8. The UP and DOWN ARROW keys will change the batch being displayed. Keys 1-8 will alter the setting of the sounder. The RIGHT ARROW will step on the fire zone number. The setting will be saved when the RIGHT ARROW is pressed. ENTER will also save the setting on the currently displayed fire zone, and then exit the routine. ESCAPE will abort the changes to the current fire zone and leave the routine.

<b>LOOP SOUNDER</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>FIRE ZONE: 03</b>	<b>P</b>	<b>C</b>	<b>C</b>			<b>P</b>		

<b>LOOP SOUNDER</b>	<b>89</b>	<b>90</b>	<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>
<b>FIRE ZONE: 24</b>						<b>C</b>		<b>P</b>

## FUNCTION 53 - CALL POINTS TO EVACUATE

This function allows the user to configure the panel so that any call point going into fire, will cause the panel to evacuate immediately. The UP and DOWN ARROW keys toggle between the 2 settings. The ENTER key will save the updated setting and exit the routine. The ESCAPE key will abort the routine without saving any of the changes.

<b>CALL POINTS WILL NOT EVAC IMMEDIATELY</b>
<b>ARROWS ALTER SETTING, ENTER SAVES</b>

<b>CALL POINTS WILL EVAC IMMEDIATELY</b>
<b>ARROWS ALTER SETTING, ENTER SAVES</b>

## FUNCTION 54 – DISPLAY LOG IN LCD

This function allows the user to view the LOG in the LCD display . The UP ARROW key scrolls forwards and the DOWN ARROW key backwards. The ESCAPE key will exit the routine .

<b>DISPLAY LOG ON LCD UP ARROW SCROLLS</b>
<b>FORWARD DOWN ARROW BACKWARDS , ESC. QUILTS</b>

## BELL AND RELAY OPERATION

### INTRODUCTION

For the purpose of clarity the details of bell and relay operation will be explained only from the point of view of the bells. Except where expressly stated, descriptions will apply to both bells and relays.

### PANEL CONFIGURATION

The 3000 SERIES 1-3 alarm panel is fitted as standard with 3 onboard bell relays and 3 onboard auxiliary relays. In addition, a MPX signal is provided which allows 32 bells and 32 relays to be operated. The auxiliary relays, of both types, are shared between fire and fault settings; i.e. any relay can be a fire relay, a fault relay or both.

### SETTING UP BELL & RELAY TYPE

The first stage of setting the bells is to decide which type of bells are to be used, standard (onboard), or multiplex. This is accomplished using function 3. When the bells are to be used in multiplex mode, the standard bells become monitors for the multiplex bells, giving a continuous, pulsing and off monitor. If the non-operated bell is used as a monitor, those bells not set-up will be turned off. If the pulsing monitor is used then those not set-up will pulse with the others going continuous. If the continuous monitor is used then all multiplex bells will go continuous. If the standard bells are to be used but the multiplex bells are still connected, then they will follow the monitor setting. The bell type will have a bearing on the other bell set-up functions, i.e. panel, loop and zone. Depending on the bell type, the user will be required to set-up either the 3 onboard bells, or the 32 multiplex bells.

The auxiliary relays can only be set to continuous. There is no monitor for the multiplexed auxiliary relays, therefore if the panel is using standard relays, then no multiplex relays will operate.

### BELL & RELAY MODES

The bells can be configured in one of the different manners: PRESET, PANEL, LOOP, ZONE or DEVICE. PRESET is the initial state on a freshly initialized RAM. Each mode will be discussed below.

#### Preset Mode

In the preset state all onboard bells will be set to ring continuously. The multiplex bells, since they use the onboard bells as a monitor will also go continuously.

In preset mode, the auxiliaries are split so that relays 1 and 2 are fire, and relay 3 is fault. The multiplex relays are split also, providing 1 to 24 as fire and 25 to 32 as fault.

#### Panel Mode

In panel mode the bells will sound in the same way no matter where the fire is on the system. Using standard bells, the user may set each bell to pulse, ring continuously, or remain silent.

The onboard auxiliary relays will be in their preset state if multiplex relays have been chosen

#### Loop Mode

Loop mode allows the user to set up 3 different patterns of bell ringing, one for each loop.

This means that if a detector on loop 1 was to go into fire, it could provide a different pattern of continuous and pulsing bells, to a detector on loop 2 or 3 going into fire.



## **Zonal Mode**

Groups of detectors may all be set to the same fire zone. The 3000 SERIES 1-3 provides 24 fire zones, which can be spread across all 3 loops. Each fire zone can be set-up to provide a different state of bell ringing. Function 7 provides the facility to set this up.

## **Device Mode**

In device mode individual detectors can be set to provide their own bell ringing pattern. These patterns are set-up as part of function 1 where there are sub-functions for standard and multiplex bells.

## **SOUNDER CIRCUIT CONTROLLERS**

The 3000 SERIES 1-3 panel allows the user to use either Apollo's SCC or Compatible loop sounder. This is decided by a keypad routine. It is not possible to have a mixture of the two types.

### **Apollo SCC's**

Apollo Sounder Circuit Controllers are set-up on a loop basis. For each loop it is possible to set-up on which loop the SCC's will operate. In addition by means of another keypad routine it is possible to set all the SCC's to pulse or go continuous.

### **Compatible Loop Sounders**

Loop Sounders are set-up on a zonal basis. There is maximum of 32 loop sounders per loop, giving a total of 96 for the system. The sounders must be placed at addresses 94 - 125 for each loop. For each fire zone it is possible to configure which of the 96 loop sounders will operate when a fire arises on that zone. Address 126 is reserved for the sounder operation and must not be used by any other device.

## **EVACUATE OPERATION**

The 3000 SERIES 1-3 panel can go into an evacuated state by: the Evac switch on the panel facia, setting a device to Immediate Evac, setting 2 Devices to Evac, the Timer timing out when it is set to Evacuate, a remote Evac from the Repeater input or the BMS input, or Call Points can be set to Immediately Evac. When these conditions arise the bells will all be set to continuous, and the multiplex bells will follow the monitor, which will set them to continuous also. Apollo SCC's or Loop Sounders will also go continuous.

## **SILENT BELLS OPTION**

It is possible to set a device (not call points) to have silent bells. This will mean that should that device go into fire it will not sound any bells that may be set-up for it. However, should the panel already be in fire, and the bells have been silenced, that device going into fire will resound the bells.

## **LOCAL FAULTS**

Should a local fault occur, e.g. Power Supply Fault, Earth Monitor Fault, etc... Then a fault relay will be set, depending on which relay mode the panel is in. No relays will be set should the standard relays be used in Loop, Zone or Device modes. If the panel is in Preset mode or if the multiplex relays are to be used then auxiliary relay 3 will be set. If the relays are in Panel mode, then the panel relay pattern will be used.

## SUMMARY OF BELL AND RELAY OPERATION

### RELAYS

MODE		ONBOARD			MPX'D			
		A3	A2	A1	1-8	9-16	17-24	25-32
PRESET	FAULT	X	-	-	-	-	-	X
	FIRE	-	X	X	X	X	X	-
PANEL	STD	PP	PP	PP	-	-	-	-
	MPX'D		PRESET		PP	PP	PP	PP
LOOP	STD	LP	LP	LP	-	-	-	-
	MPX'D		PRESET		LP	LP	LP	LP
ZONE	STD	ZP	ZP	ZP	-	-	-	-
	MPX'D		PRESET		ZP	ZP	ZP	ZP
DEVICE	STD	DP	DP	DP	-	-	-	-
	MPX'D		PRESET		DP	DP	DP	DP
LOCAL	PRESET	X	-	-	-	-	-	-
FAULTS	PANEL	PP	PP	PP	-	-	-	-
	MPX'D	X	-	-	-	-	-	-
	ELSE	-	-	-	-	-	-	-

### BELLS

MODE		ONBOARD			MPX'D			
		B3	B2	B1	1-8	9-16	17-24	25-32
IMMEDIATE EVAC		C	C	C	FOLLOWS MONITOR			
2nd DEVICE EVAC		C	C	C	FOLLOWS MONITOR			
SILENT BELLS					RESOUND			
PRESET		C	C	C	FOLLOWS MONITOR			
PANEL	STD	PP	PP	PP	FOLLOWS MONITOR			
	MPX'D	C	P	-	PP	PP	PP	PP
LOOP	STD	LP	LP	LP	FOLLOWS MONITOR			
	MPX'D	C	P	-	LP	LP	LP	LP
ZONE	STD	ZP	ZP	ZP	FOLLOWS MONITOR			
	MPX'D	C	P	-	ZP	ZP	ZP	ZP
DEVICE	STD	DP	DP	DP	FOLLOWS MONITOR			
	MPX'D	C	P	-	DP	DP	DP	DP

# SOUNDER CIRCUIT CONTROLLERS AND LOOP SOUNDER OPERATION SUMMARY

## APOLLO SCC'S AND LOOP SOUNDERS

MODE	SCC			LOOP SOUNDER 1 - 96
	LP3	LP2	LP1	
IMMEDIATE EVAC	C	C	C	CONTINUOUS
2nd DEVICE EVAC	C	C	C	CONTINUOUS
SILENT BELLS				RESOUND
PRESET	C	C	C	CONTINUOUS
ELSE		AS PROG		AS PROGRAMMED

## ASYNCHRONOUS COMMUNICATION TO USER COMPUTER

### GENERAL

Two bytes of information are transmitted from the serial port of the 3000 SERIES 1-3. This is provided to allow interfacing with the user's existing BMS system. In quiescent conditions 2 line verification bytes are transmitted. These will be a byte = 0 and a byte = 255. The format for the 2 bytes is described below. The transmission takes place at 1200 baud, using 8 data bits and 1 stop bit.

### Byte 0

Bit No.	Contents	Description
$2^7$	0	Byte Number (i.e. 0 for 1st byte, 1 for 2nd)
$2^6 - 2^0$	1 - 126	Device Address
$2^6 - 2^0$	0 or 127	Special Message is sent

### Byte 1

The most significant bit of byte 1 is always set, to indicate that it is byte 1. Bits 4 - 6 indicate which type of message is being sent. The least significant half depends if the bytes are being sent due to a device alarm or because it is a special message. If it is due to a device alarm then bits 0 - 3 will indicate which loop the device is on. If it is a special message then the pattern will indicate a status type condition. (See below).

$2^6$	$2^5$	$2^4$	Meaning of Pattern
0	0	0	Special Message in LS half of byte.
0	0	1	Device Fault
0	1	0	Device Pre-alarm
0	1	1	Device Fire
1	0	0	Device Type Changed
1	0	1	
1	1	0	
1	1	1	Line Verification

### Byte 1 on Device Alarm

$2^3$	$2^2$	$2^1$	$2^0$	Meaning of Pattern
0	0	0	0	Untraceable Call Point
0	0	0	1	
0	0	1	0	2 Devices on 1 Address
0	0	1	1	EPROM Sumcheck Error
0	1	0	0	RAM Sumcheck Error
0	1	0	1	
0	1	1	0	
0	1	1	1	
1	0	0	0	Evacuate Operated
1	0	0	1	Reset Operated
1	0	1	0	Silence Alarms Operated
1	0	1	1	Lamp Test Entered
1	1	0	0	Lamp Test Exited
1	1	0	1	Test Mode Entered

1	1	1	0	Test Mode Exited
1	1	1	1	Line Verification Byte

**Byte 1 on Device Address 127**

<b>2<sup>3</sup></b>	<b>2<sup>2</sup></b>	<b>2<sup>1</sup></b>	<b>2<sup>0</sup></b>	<b>Meaning of Pattern</b>
0	0	0	0	Secondary Supply Fault
0	0	0	1	Primary Supply Fault
0	0	1	0	P/S Fuse Fault
0	0	1	1	Aux. Supply Fault
0	1	0	0	Repeater Supply Fault
0	1	0	1	Alarm Fault
0	1	1	0	Line Fault
0	1	1	1	Earth Monitor Fault
1	0	0	0	
1	0	0	1	
0	1	0	1	
1	0	1	1	
1	1	0	0	
1	1	0	1	
1	1	0	1	
1	1	1	1	Line Verification Byte