

## FAULT FINDING GUIDE

**CUSTOMER HAD AN ALARM** Ask them to press the Full set button and tell you what indicators are on. The LED's indicate the cause of the alarm and also the setting status at the time.

**MAINS LED FLASHING** Mains failure (Restore supply)

**ZONE LED FLASHING (in exit)** Check that doors and windows are closed.

**Flashing with tamper LED.** (A detector has an open tamper).

**Flashing with Battery LED.** (The detectors battery needs replacing).

**ALARM LED ON** Full alarm. The LEDs indicate what caused the alarm.

If Engineer reset is programmed into the panel an engineer reset will be required before the system can be re-armed.

**Flashing with zone LED** A detector on soak test has triggered whilst the system was armed.

**Flashing without a zone LED** An engineer reset is required.

**BATTERY LED ON** The control panel's battery is disconnected or needs replacement.

**Flashing with zone LED** Detector has a low battery. The zone LED will flash to

indicate which one.

**SIGNALLING LED ON** The system is being blocked by a continuous transmission.

**CONTACT TRANSMITTER NOT WORKING** Check the magnetic contact is operating correctly. Open lid and check what zone it should be on. Go into the panel engineer mode and check if it has been programmed onto the correct zone.

Note: the panel will not allow you to program a detector onto two zones. When programmed onto a zone any previous zone allocation will be deleted.

**PIR NOT WORKING** The detector needs 6 minutes to settle on power up.

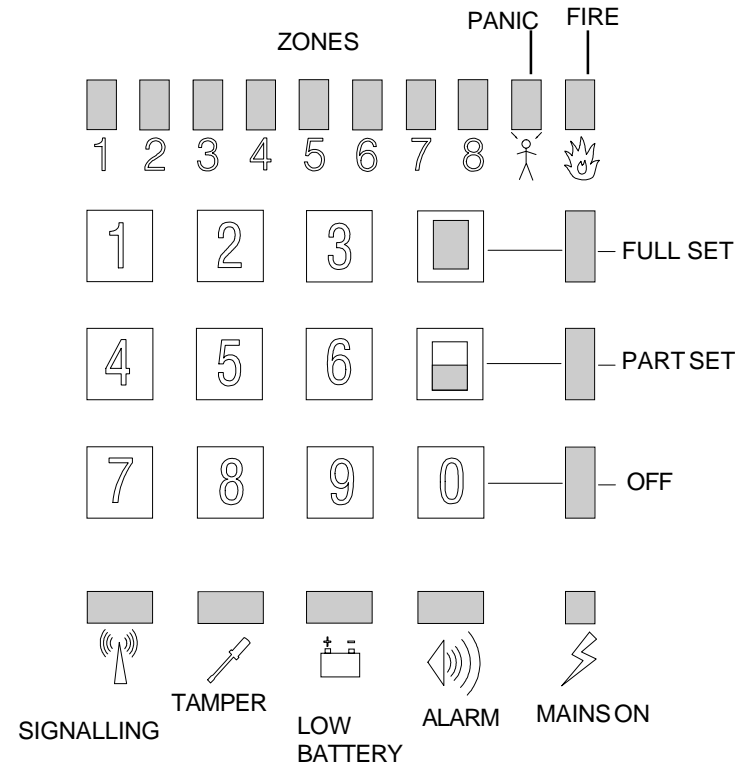
Set the control into operator walk test mode and walk test the detector with the cover removed. Removing the cover opens the tamper and overrides the 2 minute inhibit timer.

If the test jumper inside is fitted and the cover replaced it overrides the 2 minute inhibit, but allows you to walk test it without a tamper alarm.

**CUSTOMER HAS FORGOTTEN THEIR CODE** Open the panel and short out the MEM jumper. The user and engineer codes will be restored to the factory defaults 1234 & 4679. No other programming is affected.

## FM4000E CONTROL PANEL

### INSTALLATION INSTRUCTIONS



FM Electronics Ltd Manufacturer of quality wireless products

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## CONNECTIONS (RIGHT HAND SIDE)

1-4 12V Auxiliary supply output. Maximum load current 500mA

5 Tamper -ve return. If connecting a Self Actuating Bell (SAB) then connect the -ve tamper return to this terminal. If not fitting a SAB this terminal must be connected to -veAux.

6. This terminal provides a +ve output on alarm, which is reset next time the panel is armed. It is provided for use with hard wired detectors that have a latching LED facility.

7. -ve to trigger Siren. Goes from open circuit to 0v to operate a bell or siren. Max 500mA. Resets after the bell time set in engineer program.

8. -ve Strobe. Goes from open circuit to 0v in alarm to operate a strobe. Remains on until the system is disarmed.

9. Dialler trigger output. Is provided for triggering an autodialler. This output goes to 0v on full alarm. Once triggered it remains until the panel is disarmed, so as not to trigger any more until the system is turned off.

## CONNECTION (BOTTOM EDGE)

### RECEIVED SIGNAL STRENGTH INDICATION (RSSI)

For connection to a digital voltmeter to indicate the Signal Strength of a transmission received from a detector. (Refer to section on using the RSSI output).

## INSTALLATION

The factory defaults for the user and engineer codes are:-

USER CODE = 1 2 3 4

ENG CODE = 4 6 7 9

The recommended installation procedure is as follows:

### 1. Label detectors.

Each detector has a label inside for you to write the zone number onto for reference during installation and for later service reference.

### 2. Complete the User Record

The back page of the user instruction booklet should be completed and left with the operator for their reference. It gives them information about the zones and entry exit times etc.

### 3. Complete a system record sheet

A system record sheet should be completed before commencing programming. This acts as a reference when programming and can form part of the installation records.

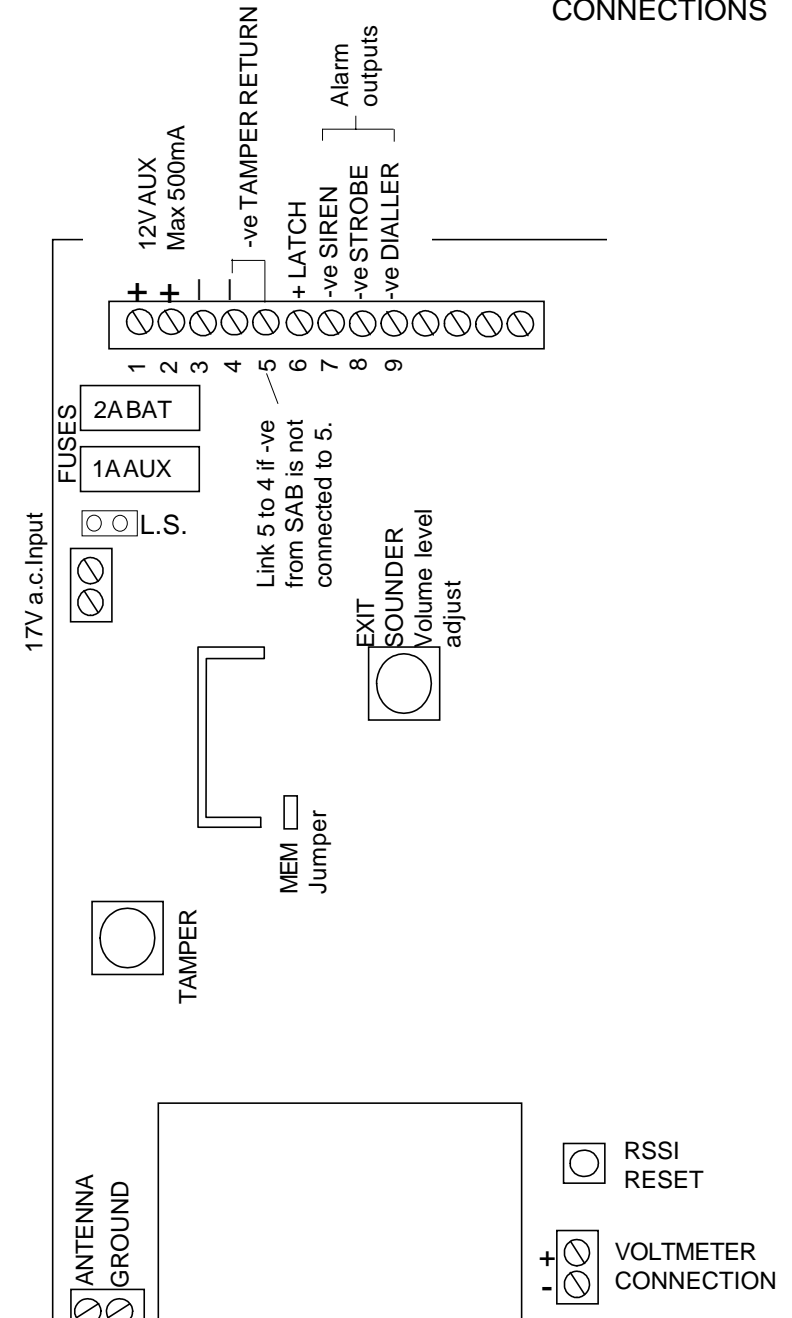
### 4. Locate the control panel

For best radio coverage the control panel is best located at a central point in the building. The higher it is the better for radio reception. (Do not mount at floor level on a ground floor)

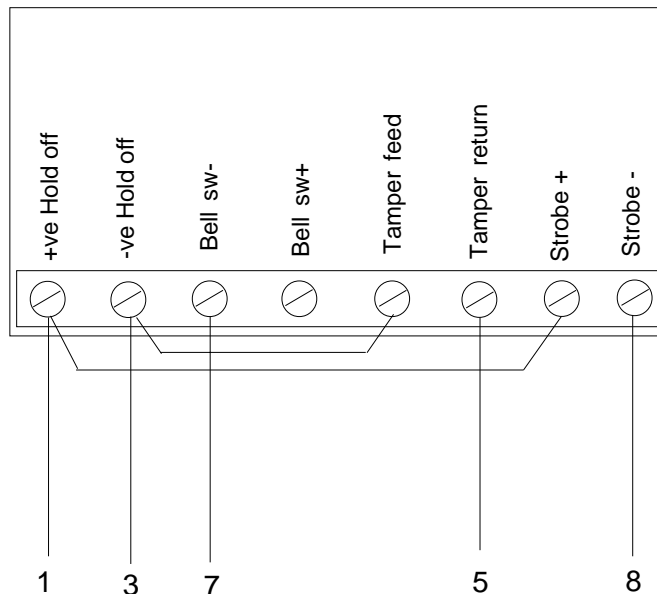
Metal objects cause radio reflections which oppose the signal being received from the detector with a resultant reduction in the received signal strength. Metalwork close by can result in complete cancellation, therefore do not site the control panel or detectors near to large metal objects, metal piping, girders, concentrations of mains cabling, fuse boxes etc.

Consider the ease of wiring to the external siren when making your choice.

## CONNECTIONS



## SAB CONNECTION TO THE FM4000



Connections on the FM4000 main board

The Panel may be temporarily sited whilst a test is carried out to verify the reception from distant detectors.

When satisfied the panel must be fixed using the three fixing points provided.

Mains supply to the control panel must be provided by a competent electrician to the current issue of the IEE regulations.

A 12v sealed lead acid stand-by battery should be connected, after all wiring has been completed and tested. 12v 1.9AH is recommended.

### 5. Program detectors onto the panel

Each detector has an internal "Learn" jumper.

To add a detector to the system:

Go into the engineer program. Select the zone number. Short out the learn jumper on the detector. Remove the learn jumper after programming

The detector transmits its identity together with a learn bit. The panel stores the detectors identity code and adds it to the chosen zone.

(Refer to engineer programming section)

### 6. Carry out range test

If you keep a 4174 remote control for testing, you can program this onto the system and then go to each detector location in turn and verify that the control can be armed and disarmed from all detector locations.

### 7. Mount the detectors

Refer to the detector instructions for recommended mounting positions.

As reflections from metalwork act to cancel the transmission, avoid siting near to any metalwork.

Reflections like this can often be overcome by a small movement in position of 15 to 20cm.

### 8. Making panel program changes.

Complete a system record sheet before making any changes.

Once programmed the program is stored in non-volatile memory, so data will remain stored even in the event of complete power failure.

### 9. Radio test using the RSSI output

To measure the signal strength received from a detector.

i) Connect a Voltmeter to the RSSI output terminals.

ii) Press the reset button next to the RSSI terminals. The voltmeter should now read zero volts.

iii) Go to the detector and operate the learn jumper.

iv) Return to the panel. The voltmeter now displays a voltage representing the strength of the transmission received.

It will ignore any other transmissions and only respond to the learn message or a Panic or Off message from a remote control or panic button.

The voltage reading should be a minimum of 1.0v.

The readings for each detector can be recorded on the system record sheet for future reference.

### 10. Full system test

A walk test facility is provided in the Operating instructions. This may be used to do a test of the detectors only.

Once the Sounders and dialler have been connected and the installation completed a full test with remote signalling should be carried out.

## PROGRAMMING

### 1. Enter the engineers code 4 6 7 9

The Alarm led will flash slowly to indicate that you are in the program mode.

2. Key in the two digit program number.  
(The zone led's indicate which option is set.)

3. Key in the option required  
(The zone led's indicate your choice)

4. Press the Full Set key to exit that program step.

5. When finished with programming key in 48 to exit engineer mode.

### ERROR CORRECTION VIA PART SET KEY

If you accidentally enter an engineer program number and change an option value, you can undo the change by pressing the Part Set key before exiting the program step via the Full Set key.

**EXAMPLE:** To set the Full set entry timer to 1 minute.

Key in 4 6 7 9. The alarm indicator will illuminate to indicate that you are now in engineer program mode

Key in 1 2 To select Full set exit time (program No. 12.)

Key in 6 To select the 1 minute option.

Zone 6 LED indicates your choice

Press the Full Set button to exit program

step.

**Note:** The Full set button must be pressed to exit from each program step.

Until the Full Set button is pressed any key press just changes your choice of option.

Key in the next program Number you wish to change.

When all programming is complete Key in 48 to exit engineer mode

### 00 INVERT SIREN OUTPUT

Normally -ve applied in alarm.(0v in alarm)

0 = -ve applied in alarm

1 = -ve removed in alarm

### LEARNING DEVICES

When installing the system you may find it easier to label each detector with its zone number and learn them into the panel before installation. Once programmed into the panel's memory, the information will not be lost even when power is removed from the panel.

### 01 PROGRAM DEVICES ONTO ZONE 1

Select program number 01. The numbered LED's will indicate how many detectors are already on that zone. eg. if LED's 1, 2 and 3 are lit then there are 3 devices on that zone.

To delete all detectors from that zone press Part set & 0 keys together.

To add a detector to a zone, briefly short out the learn jumper on the detector and ensure that the learn pins are not left permanently shorted.

The panel will emit 2 short blips to indicate that it has learnt the detector and the

### REMOTE ENGINEER RESET FACILITY

When an alarm occurs which requires an engineer reset, the user can call the Central Station and obtain the access code number to key in to the panel.

The panel zone LED's will illuminate randomly.

From the LED's the Central Station operator can refer to a reference table and instruct the user what code to enter to perform an engineer reset.

Next time the alarm operates the reset code number will have changed.

1= Yes O= No\*

Press the full set key to exit.

### 34 JAMMING

1 = Jamming generates a full alarm when set

O= indicator only\*

Press the full set key to exit.

(Jamming is signalled to the dialler outputs.)

### 35 MAINS FAILURE & PANEL LOW BATTERY PREVENTS ARMING

1 = Mains failure or Panel battery failure prevents arming.

O = Does not prevent arming\*

Press the full set key to exit

### 36 REMOTE CONTROL UNSETS ONLY IN ENTRY

1= Unset only after entry timer has been started.

O= Unset not inhibited\*

Press the full set key to exit.

### 37 DIALLER DELAYED

(20 second abort time)

1= Delayed O= Instant \*

Press the full set key to exit

### 38 NO EXTERNAL BELL OR DIALLER IN PART SET

(Internal bells only in Part Set).

1= Internal sounder only in Part Set.

O= Dialler and siren In both full or part set\*

Press the full set key to exit

### 42 ENGINEER RESET

1= Engineer reset O= No\*

Press the full set key to exit.

### 43 REARMING

1= none 2= once 3= twice 4=always\*

Press the full set key to exit

### 44 RESTORE ENTIRE NV RAM TO FACTORY DEFAULT VALUES

Short out the MEM link while keying in 44. All zone LED's will come on, the panel will emit a long bleep and will go out of engineering mode into the day state.

**WARNING:** This will delete all detectors from the system.

### 45 AUDIBLE RECEIVE MODE

The output from the receiver can be heard on the panel loudspeaker.

Press the full set key to exit.

### 46 DISPLAY ENGINEERS LOG

Press keys 1 to 8 to view the last 8 events. Most recent is displayed on key 1.

Key 9 shows the last "First to Alarm"

Press the full set key to exit.

### 47 CHANGE ENGINEERS ACCESS CODE

Key in a 4 digit code twice.

### 48 LEAVE ENGINEER MODE

If any devices have their tampers open, the display shows which zones are tampered and will generate an error beep.

The tampers must be restored before leaving engineer mode by pressing 48 again.

new total of devices on that zone will be displayed on the numeric LED's.

Press the Full Set key to exit.

### 02 PROGRAM DEVICES ONTO ZONE 2

### 03 PROGRAM DEVICES ONTO ZONE 3

### 04 PROGRAM DEVICES ONTO ZONE 4

### 05 PROGRAM DEVICES ONTO ZONE 5

### 06 PROGRAM DEVICES ONTO ZONE 6

### 07 PROGRAM DEVICES ONTO ZONE 7

### 08 PROGRAM DEVICES ONTO ZONE 8

### 09 RADIO PANIC BUTTONS

To delete all Panic Buttons already on this option press Part & 0 keys together.

To add a new device press the panic button.

The panel will emit 2 short blips to indicate that it has read the panic button and LED 1 will indicate that one PA has been programmed in.

You can add up to 8 PA's to the panic zone by simply pressing each one in turn.

Press the Full Set key to exit.

### 10 FIRE ALARM DEVICES

To delete all Fire sensors press Part & 0 keys together.

To add a fire sensor, short out the learn jumper.

The panel will emit 2 short blips to indicate that it has read the sensor and zone 1 LED

will indicate that one sensor has been programmed in.

Up to eight sensors can be programmed onto the fire zone by simply shorting out the learn jumper of each one in turn.

Press the Full Set key to exit

### 11 REMOTE CONTROLS

To delete all Remote Controls press Part & 0 keys together.

To add a remote control press the Panic button. The panel will emit 2 short blips to indicate that it has read the remote control and LED 1 will indicate that one remote has been programmed in.

You can add up to 8 remote controls by simply pressing each one in turn.

Press the Full Set key to exit.

### 12 FULL SET EXIT TIME

1= 2 secs 2= 10 secs 3= 20 secs\*

4= 30 secs 5= 45 secs 6= 1 min

7= 2 mins 8= 3 mins

Press Full Set to exit

\* = FACTORY DEFAULT

### 13 PART SET EXIT TIME

1= 2 secs 2= 5 secs 3= 10 secs\*

4= 15 secs 5= 20 secs 6= 30 secs

7= 1 mins 8= As full set exit time.

Press Full Set to exit

### 14 ENTRY TIME

1= 1 sec 2=10 secs 3= 20 secs

4= 30 secs\* 5= 40 secs 6= 50 secs

7= 1 min 8= 2 min

Press Full Set to exit

### 15 BELL DURATION

1= Silent 2= 15 secs 3= 2 mins

4= 3 mins 5=10 mins 6= 15 mins

7= 20 mins\* 8=Continuous

Press Full Set to exit

## 16 BELL DELAY

1= 0 mins\* 2= 1 min 3= 3 mins  
4= 4 mins 5= 5 mins 6=6 mins  
7=7 mins\* 8= 10 mins

Press Full Set to exit

## 17 FULL SET ZONES

The factory default is all zones active.  
The zone LED's indicate which zones are active in full set.

Use the keys 1 to 8 to select or deselect zones. The 0 key deletes all.

Press the full set key to exit.

## 18 PART SET ZONES

The factory default is zones 1 to 4 active.  
The zone LED's indicate which zones are active in part set.

Use the keys 1 to 8 to select or deselect zones. The 0 key deletes all.

Press the full set key to exit.

## 19 OMIT PERMIT ZONES

(The zones that the user is allowed to omit)  
The factory default is all zones allowed to be omitted except zone 1.

The zone LED's indicate which zones are allowed to be omitted.

Use the keys 1 to 8 to select or deselect zones. The 0 key deletes all.

Press the full set key to exit.

## 20 FINAL EXIT ZONES

(Zones that start the entry timer)

The factory default is zone 1 only.

The zone LED's indicate which zones will start the entry timer.

Use the keys 1 to 8 to select or deselect zones.

The 0 key deletes all.

Press the full set key to exit.

## 21 WALKTHROUGH ZONES

The factory default is none.

The zone LED's indicate which zones are walk through during entry.

Use the keys 1 to 8 to select or deselect walk through zones.

The 0 key deletes all.

Press the full set key to exit.

## 22 IGNORE ZONE IF FIRST TO ALARM (Double Knock)

Alarm only if two zones are triggered.

The factory default is none.

The zone LED's indicate which zones are double knock.

Use the keys 1 to 8 to select or deselect double knock zones.

The 0 key deletes all.

Press the full set key to exit.

## 23 AUXILIARY ZONES

Technical alarm. ie. Freezer giving internal audible and technical alarm channel of dialler.

The factory default is none.

The zone LED's indicate which zones are auxiliary zones.

Use the keys 1 to 8 to select or deselect aux. zones.

The 0 key deletes all.

Press the full set key to exit.

## 24 24 HOUR ZONES

The factory default is none.

The zone LED's indicate which zones are 24 hour.

Use the keys 1 to 8 to select or deselect 24 hour zones.

The 0 key deletes all.

Press the full set key to exit.

NOTE: If you do not want a 24 hour zone to be omitted, remove the zone from omit

permit via program No.19.

## 25 SOAK TEST ZONES

The factory default is none.

The zone LED's indicate which zones are on soak test.

Use the keys 1 to 8 to select or deselect soak test zones.

The 0 key deletes all.

Press the full set key to exit.

## 26 CHIME ZONES

The factory default is none.

The zone LED's indicate which zones are on chime.

Use the keys 1 to 8 to select or deselect chime zones.

The 0 key deletes all.

Press the full set key to exit.

**27 P.A. SILENT/AUDIBLE** The factory default is audible.

1= Silent O= Audible \*

Press the full set key to exit.

## 28 DOUBLE BUTTON P.A.

(To activate a panic from a remote control, both PA & OFF buttons must be pressed simultaneously)

The factory default is single button.

1= Double O= Single\*

Press the full set key to exit.

## 29 SILENT PART SET

1= Silent O= Audible\*

Press the full set key to exit.

## 30 UPSTAIRS/DOWNSTAIRS

This option tells the panel to accept part set button as a separate alarm system.

eg. The Part Set button becomes the alarm system in the flat & the Full set button is a separate alarm system in the office. In this mode the user can set either one or the other, or both systems by selection when arming.

1 = Select Upstairs/Downstairs mode.  
O= Normal Part / Full set mode.\*  
Press the full set key to exit.

## 31 8 SECOND STROBE WHEN FINAL SET AND UNSET

If selected the strobe output operates for 8 seconds at the moment the panel is full set. i.e. when the exit timer terminates.

The strobe also operates for 8 seconds when the panel is Unset from Full Set.

1 = 8 sec. Strobe 0 = No 8 second strobe

Press the full set key to exit.

## 32 COURTESY STROBE IN FULL SET ENTRY/EXIT

If selected the strobe output terminal 8 operates when Full setting the panel. The strobe output also operates for the entry time when unsetting from Full Set.

(If a mains relay was connected via this output a mains courtesy light could be switched on by disarming from outside with a remote control.)

1= Courtesy strobe on O=off\*  
Press the full set key to exit.

## 33 WALK THROUGH ZONES BECOME FINAL EXIT IN PART SET

To prevent false alarms in part set it is often useful to make walk through zones initiate the entry timer.