4700
Installation and User Guide

Compatible Equipment

4725	Remote Keypad
4702	PA Transmitter
4704	Door Contact Transmitter
4705	PIR Transmitter
960	Speech Communicator

Introduction

The 4700 is a programmable 16 zone Radio Alarm System designed for Domestic premises.

A basic system comprises a control unit with built in keypad, and associated radio detectors. The control unit houses the system electronics, power supply, battery, and 960 Communicator (if fitted). A numeric keypad, eight Light Emitting Diode (LEDs) and two seven segment LED displays allow the user and installer to operate the system. The control unit can be connected to up to four extra Remote Keypads.

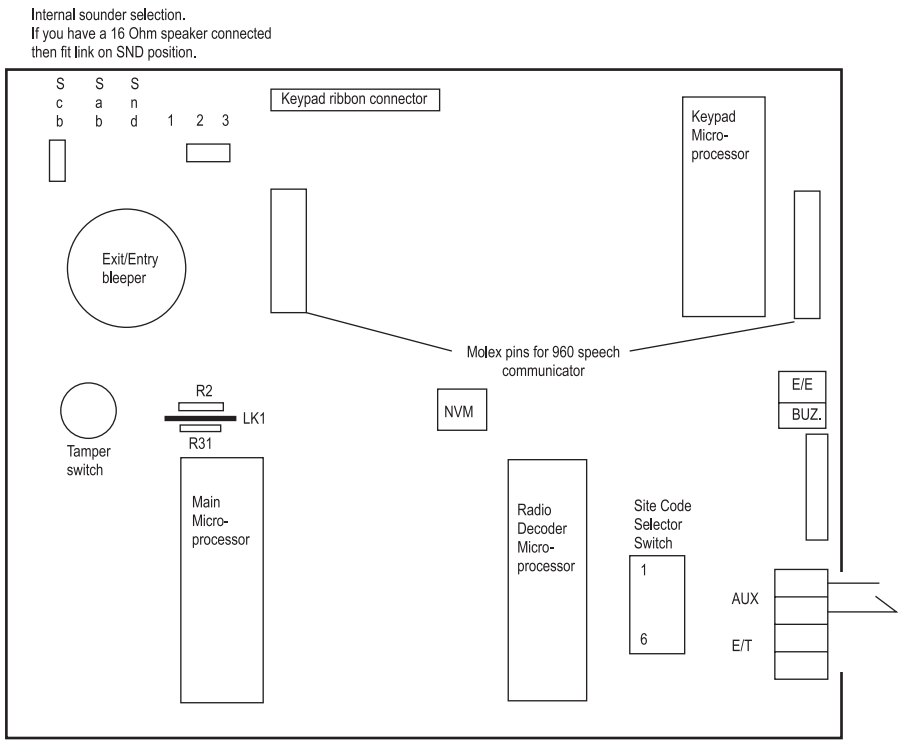

Figure 1. Main Control Board Layout.

Notes:

1. When connecting an extension buzzer ensure that it is a Piezo type and is a LOW current unit such as a wafer type without a driver.

2. If you are not using Exit Terminate set then do not connect E/T terminals.

3. Ensure that the Site Code is the same on both the contral panel and its associated transmitters.

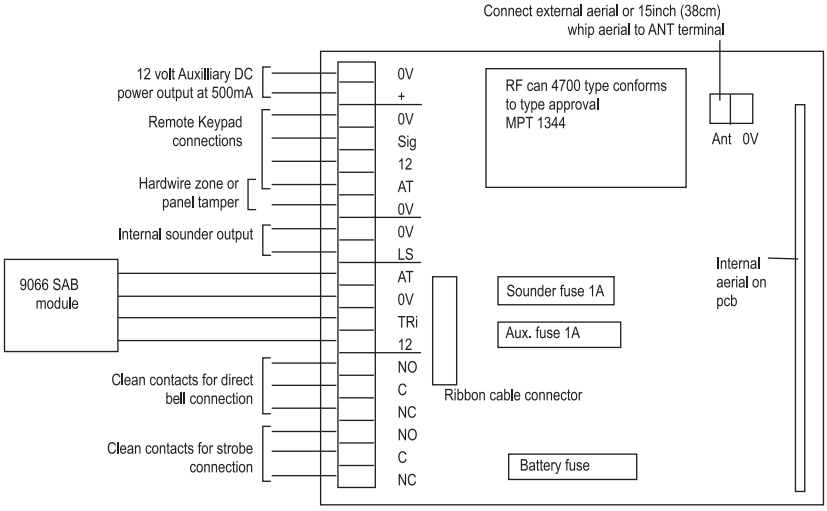

Figure 2. Power Supply PCB Layout.

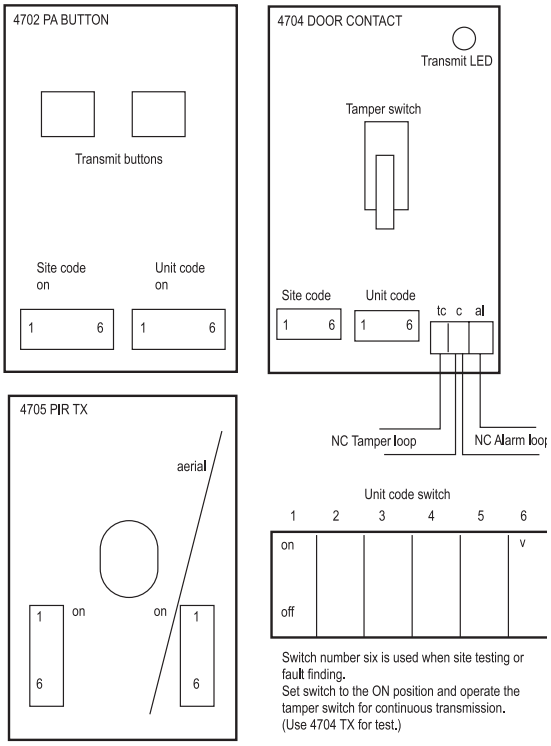

Figure 3. Transmitter PCB Layouts.

Transmitter Coding

The control panel and transmitters must all have the same Site Code. Set this using the DIP switches (marked “Site Code”) in the transmitters and on the control panel main pcb. Each complete system must have a different code, to avoid the possibility of adjacent systems interfering.

EXAMPLE

Control panel Site Code switches 1, 3, 5 “on“; switches 2, 4, 6 “off”.

All transmitter Site Code AS CONTROL PANEL SITE CODE.

This will ensure that all the transmitters on this particular system are recognised by the control panel.

The DIP switch marked Unit Code on the transmitters is used to allocate each transmitter to a particular control panel zone.

IMPORTANT

You must have only one transmitter for each zone.

The list below gives you the Unit Code switch positions for each zone (read switches from left to right):

Alarm zone	**1**	**2**	**3**	**4**	**5**	**6**
Zone 1	on	on	on	on	off	off
Zone 2	on	on	on	off	on	off
Zone 3	on	on	on	off	off	off
Zone 4	on	on	off	on	on	off
Zone 5	on	on	off	on	off	off
Zone 6	on	on	off	off	on	off
Zone 7	on	on	off	off	off	off
Zone 8	on	off	on	on	on	off
Zone 9	on	off	on	on	off	off
Zone 10	on	off	on	off	on	off
Zone 11	on	off	on	off	off	off
Zone 12	on	off	off	on	on	off
Zone 13	on	off	off	on	off	off
Zone 14	on	off	off	off	on	off
Zone 15	on	off	off	off	off	off
Zone 16	on	on	on	on	on	off

The hardwired zone [AUX] is designated Zone zero and does not require a Unit Code.

Programming

Initial Power Up

1. Ensure that the control panel Site Code is the same as all the transmitters on your system.
2. Ensure that each transmitter is coded to a particular zone.
3. Ensure that the transmitters are not powered up.
4. Ensure that no bells, strobes or sounders are connected to the control panel.
5. Close control panel lid or defeat the lid tamper.
6. Apply mains to the control panel first.

   The green power LED wil light and the bleeper will sound for approx 1 second.
7. Key in 1234.

   You are now in DAY mode.

   The display shows 4 and the fault LED flashes (depending on the status of the system when powering up).
8. Key in 0 + Enter + 7890.

   The display clears and the power LED glows steadily.

   You are now in engineer mode.
9. Open the control panel or remote keypad and continue.

Engineer Program Command List

To change:	Key-in: Followed by: Notes		Default
Zone n	**n** ENTER X ENTER	n = zone number x = Zone type, one or more of:	
After keying in an option, key in 1 to enable or 0 to disable, followed by Enter once you have selected all the zone commands you want to change.		2 = Zone enable 3 = Soak test 4 = Omit permit 5 = Chime (see note 2) 6 = Part set guard 7 = Special options (see below)	0 0 0 0 0 0
Zone n Option 7=0	8=0, 9=0 8=0, 9=1 8=1, 9=0 8=1, 9=1	Normal night circuit Entry route Do not use Final door	✔
Zone n Option 7=1	8=0, 9=0 8=0, 9=1 8=1, 9=0 8=1, 9=1	24 hour zone Audible PA Fire zone Silent PA (see note 3)	
Engineer Code	**20** ENTER New code ENTER 4 digits		7890
User Code 1	**21** ENTER New code ENTER 4 digits		1234
Line Monitor	**31** ENTER 0 ENTER 1 ENTER	Audible line fault (see note 4) Silent line fault	 ✔
System Reset	**32** ENTER 0 ENTER 1 ENTER	Customer Engineer	✔
First Circuit Lockout	**34** ENTER 0 ENTER 1 ENTER	Rearm Lockout	 ✔
Auto Re-Arm	**40** ENTER 1 ENTER 2 ENTER 3 ENTER 4 ENTER 5 ENTER 6 ENTER 7 ENTER 8 ENTER	Never rearm Rearm once Rearm twice Rearm three times Rearm four times Rearm five times Rearm six times Always rearm	✔ ✔
Bell Delay	**41** ENTER 1 ENTER 2 ENTER 3 ENTER 4 ENTER 5 ENTER 6 ENTER 7 ENTER 8 ENTER	No delay 90 seconds 3 minutes 5 minutes 10 minutes 15 minutes 20 minutes Endless	✔
Bell Time	**42** ENTER 1 ENTER See command 41 options	No delay	7 (20 mins)

To change:	Key-in:	Followed by:	Notes	Default
Entry Time	**43** ENTER	1 ENTER	10 seconds	
		2 ENTER	20 seconds	
		3 ENTER	30 seconds	
		4 ENTER	1 minute	
		5 ENTER	1.5 minutes	
		6 ENTER	2 minutes	
		7 ENTER	5 minutes	✔
		8 ENTER	Endless	
Exit Time	**44** ENTER	1 ENTER	10 seconds	✔
		2 ENTER	20 seconds	
		3 ENTER	30 seconds	
		4 ENTER	1 minute	
		5 ENTER	1.5 minutes	
		6 ENTER	2 minutes	
		7 ENTER	5 minutes	
		8 ENTER	Endless	
Supervisory on/off	**45** ENTER	3 ENTER	Supervision on	
		8 ENTER	Supervision off	
Exit Mode	**51** ENTER	0 ENTER	Timed or terminate	✔
		1 ENTER	Final door	
Final door in Part Set	**62** ENTER	0 ENTER	Final door omitted	✔
		1 ENTER	Final door guarded	
Part Set Exit Mode	**64** ENTER	0 ENTER	Quick set (5 seconds)	
		1 ENTER	Timed set (see command 44)	✔
Entry route in Part Set	**65** ENTER	0 ENTER	Normal alarm	✔
		1 ENTER	Entry/Exit	
Part Set Alarm Response	**66** ENTER	0 ENTER	Local Alarm (bells only)	
		1 ENTER	Full Alarm + comms	✔
Event Log	**90** ENTER		See “Testing”	
Bell Test	**91** ENTER		Press Omit to stop	
Strobe Test	**92** ENTER		Press Omit to stop	
Internal Sounder Test	**93** ENTER		Press Omit to stop	
Keypad Sounder Test	**94** ENTER		Press Omit to stop	
Display Test	**96** ENTER		Press Omit to stop	
Walk Test	**97** ENTER		Press Omit to stop	
Load Defaults	**98** ENTER			
Leave Programming	**99** ENTER			

Notes:

1. If a movement detector is to be used in the system as an Exit / Entry detector and NO final door contact is to be fitted then the detector zone MUST be programmed as a FINAL DOOR and not as an Entry route. This will allow the zone to operate in both full set and part set, thus there will be no need to use the Command 65 in the Part set programming.

2. If this option is used any 4704 door contact transmitter which is left in the door open state will emit chime every 17 minutes [supervisor signal].

3. If a zone is selected to be a P.A. either silent or audible the supervisor signal is not active and is designed for use with only 4702 portable P.A. buttons.

4. This option is only active when a 9058 communicator is part of the system and the control panel is in the set mode. The line monitor is designed to detect off hook, ringing in and cut line. If you select either option, you will always have an internal audible warning of the loss of the telephone line when the system is in the day mode. If this occurs the internal sounder will emit a tamper warning and the display will flash 7 plus a fault LED, enter the customer code to silence the sounder. The communicator will also give a communication fault if it fails to contact the central station, if this occurs the display will flash 6 plus a fault LED and if the system is set it will override the bell delay.

Non-volatile Memory Chip

The NVM memory chip stores the system program in the event of a total power failure or a control board fault.

The NVM is designed as a reusable device and is reprogrammed every time you leave the engineering mode and key in 99 + Enter.

If an end user looses their access code or if the memory becomes corrupt then you should carry out the following procedure:

1. Power down control panel both mains and battery.
2. Remove the NVM chip from its socket.
3. Defeat lid tamper switch and power up control panel battery first.
4. Key in 1234.
   The DAY LED lights, you are now in DAY MODE.
5. Key in 0+ Enter+7890 then release tamper switch.

The display clears. YOU ARE NOW IN ENGINEER MODE.

6. Refit NVM chip with power on. Take care to orientate it correctly: white dot or bar to the top.
7. Key in 98 + Enter.

   You have now loaded factory default codes. You can now reprogram the system.

Testing

The following commands are designed for engineering test and can be performed with the panel open or closed as long as the panel is in engineering mode.

90 + Enter	Event log. The log holds approximately sixty events showing alarms set, unset, faults etc. Once entered the display will stop at each event for approx two seconds. To exit this command key omit.
91 + Enter	Continuous bell output from the SAB output. This command also changes the state of the direct bell contacts. To exit this command key omit.
92 + Enter	Continuous strobe output. To exit key omit.
93 + Enter	Continuous internal sounder output from the terminals 0v and LS. To exit key omit.
94 + Enter	Bleeper output from the control and the remote keypads. To exit key omit.
96 + Enter	Display test. To exit key omit.
97 + Enter	Engineer walk test. When walk testing the 4702 P.A. buttons the display will latch up. To clear key omit and re enter 97 + Enter. When testing the 4705 PIR detector you must remember that the detector will go to sleep after an activation for about three minutes to conserve battery power.
98 + Enter	Load the standard factory codes in the event of you making programming mistakes. The control panel tamper switch must be open when keying in this function.
99 + Enter	Exits engineer mode and loads all the system program into the NVM chip. Make sure the control panel tamper switch is closed when leaving the engineer mode.

Fault Finding

Display output codes.

In the event of:	The display shows:
Zone alarm	Zone number plus alarm LED.
Zone tamper	Zone number plus tamper LED.
Zone low battery	Zone number plus bats/ sig LED.
Zone missing signal	Zone number plus bats/ sig LED plus fault LED.
Lid or hardwire loop tamper	“A” plus tamper LED.
Zone zero alarm	“A” plus alarm LED.
P.A. circuit	Zone number plus alarm LED.
Carrier detection	Carrier LED.
Entry alarm	Zone number plus alarm LED.

Fault indications

In the event of:	The display shows:
Mains supply	1 plus fault LED.
Battery fault	8 plus fault LED.
Aux. DC. fault	2 plus fault LED.
Total power fail	4 plus fault LED.
Line fault	7 plus fault LED.
Communication fault	6 plus fault LED.
System fault	3 plus fault LED.

Rf Fault Finding and Trouble Shooting

If the correct site survey and installation procedure is followed, there should be no significant problems encountered. However, in the event of either an environmental or system fault occurring, the following fault finding guide may help you.

Supervisory Signal Fault

This is the most commonly reported fault. The symptoms can be as follows:

a) No signals from a transmitter in 1.2 hours. The fault LED will flash, any attempt to set the system will an cause the zone number and the batt / sig. LED to light. A successfull transmission is required to clear the fault. This can be tamper, alarm or supervisor signal.

b) No signals from a transmitter in 3.6 hours. In the DAY mode this will cause a tamper alarm plus the zone number, batt/signal. LED and the fault LED. If the system is set this condition will cause a full alarm condition. On entry the display will be as above and a successfull transmission is required to clear the fault.

The causes for this condition may be as follows:

a) A badly sited transmitter.

b) A change in the layout of the premises since the installation was completed.

c) A faulty transmitter or a flat battery [this condition can also be mistaken for a low battery condition] but in low battery fault only the batt/signal LED and the zone number will be lit.

To ascertain the possible cause proceed as follows:

1) Remove covers off the suspect transmitters and measure the battery voltage on load. The low battery monitor operates at approx 6.3 volts.

2) If a low battery is found change the battery and retest the system.

3) If the fault is a missing supervisor signal and you know which zone is affected, you should carry out the Site Survey procedure using the Scantronic Signal strength meter, you may have to relocate the transmitter. (You should carry out this test with only the internal aerial on the control panel in use.)

4) A number of environmental causes may affect the radio signals. You should note these and take them into consideration when fault finding the system. The proximity of transmitters to steel doors, parked cars in a garage, wet or damp walls, office equipment such as metal filing cabinets. If you find any of these conditions retest the system using the signal strength meter and if necessary move the transmitter affected.

Carrier Alarm

This condition shows on the control panel in the following ways:

a) In the DAY mode the carrier LED flashing, this tells you that a jamming transmission has affected the system for between ten and twenty

seconds. This will clear upon the transmission of a valid signal which can be alarm, tamper or supervisor. Any attempt to set the system will cause an exit fault and the display will show the carrier LED plus “A”.

b) In the DAY mode a tamper alarm occurs plus the carrier LED flashing. This tells you that a Jamming transmission has affected the system for longer than Thirty seconds. This will require the tamper alarm to be cleared and the display will clear upon a successful transmission of either an alarm, tamper or supervisor signal.

User Commands

Set/Unset System	User code
Omit zone	User code + Omit + Zone number + Enter (repeat for all zones to be omitted)
Part Set	Part Set + ENTER + User code
Test Bells	Bell Test + ENTER + User code
Walk Test	Walk Test + ENTER User code User code to end test
Change User code	6 + ENTER + current User code + new User code + ENTER.
Chime On/Off	Chime + ENTER + User code
Read Log	Scroll + ENTER