

Preface

This first issue covers automatic and manual operation of the voice alarm products such as, the audio control unit and four zone desk microphone unit in conjunction with the 3400 fire control panel.

The details of the systems operational requirements are covered in *BS7443 Specification for sound system for emergency purpose* and further recommendations are in *BS5839:Part 1:1988*, which is the *code of practice for Fire detection and alarm system for buildings*. Other operational requirements may be site specific and may be covered in the site specific project specification.

Associated Documents

- 13499-30 Installation Manual for System 3400 Orator II
- 13499-22 Applications Manual for System 3400 (with 34000 devices)
- 13499-24 Commissioning Manual for System 3400 (with 34000 devices)
- 13499-23 Installation Manual for System 3400 (with 34000 devices)
- 13499-26 Operating Manual for System 3400 (with 34000 devices)
- 13563-011 GENT Supervisor Operator's Manual

Conventions

NOTE: A note highlights important text that is normally hidden in the main text.

CAUTION: A caution is given to prevent damage to equipment.

WARNING: A warning is given to advise of dangerous conditions that may result in injury or death.

Issue Record

Section	Issue	Date	Comments
Prelims	1	3/98	This first issue covers the Operation of system 3400 Orator II
1 to 13	1	3/98	
Parts	1	3/98	
Phone	1	3/98	
Quick ref	1	3/98	

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Customer feedback

If you have any comments on this manual, then please provide them below. Post completed sheet to the address overleaf or pass on to your area sales representative.

Thanks

Your name: _____

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Manual number and title _____



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User Responsibility

It is recommended that the **persons responsible** for the fire alarm system should become familiar with the procedures on how to operate the controls and interpret indications given at specific products. Adequate **training** should also have been given from appointed personnel.

British Standard

The British Standard recommends that if your system is designed with a **3404 Control panel** that meets the requirements of *BS 5839:Part 4:1988*, then the use of following controls accessible under '**Customer Password**' are not allowed, **[Disable] [IO Line]** option under the **[Control]** menu and **[Set Clock]** option under the **[Setup]** menu.

Daily

The British Standard code of practice for *Fire detection and alarm systems for buildings, BS 5839:Part1:1988*, states that the system should be inspected daily to ensure that a normal indication is given at the control and indicating equipment and that any previously indicated **fault** and **warning** condition has received appropriate attention.

- a) It recommends entry into the Log Book provided of all the system events for future reference. **To view past events look at the Historic Events Log at the 3400 control panel.**
- b) The person inspecting the protected premise can ensure that the use of the area(s) inspected has not changed such that the detection and alarm devices have become inappropriate.
- c) The area(s) can be inspected to check that no unsafe practices that could lead to fire are being undertaken.

Weekly

At Weekly intervals a different **Fire Sensor** or **Manual Call Point** of the fire system should be tested to ensure the system is capable of operating under alarm condition.

NOTE: Wait for the message to be heard completely before silencing the message announcements in the system.

- a) The operation of the **Speaker zones** and **Alarm sounders** should be checked, which also provides a regular reminder to those occupying the premises that there is a fire alarm system.
- b) The test should be performed at a regular time to avoid confusion between a test and a genuine fire alarm.

Quarterly

At quarterly intervals the system should be inspected and any work necessary should be performed by trained maintenance engineer. The servicing organisation should be contacted for advice on commissioning.

Battery Replacement

NOTE: Any service work on the System 3400 Orator II must be carried out by Servicing organisation.

Panel Battery

Under normal operating conditions the maintenance free **lead acid** batteries in the Audio control units (master or slave), Distributed amplifier units, Fire control panel, Repeat panels, Mimic panels, Zonal panels, A4 Mimic control unit, Mains powered interface units and Terminal node can have a useful life of up to **5 years** from the date of manufacture.

NOTE: It is recommended that these batteries are replaced at 4 Yearly interval from the date the 3400 Orator II System is first commissioned.

Manual Call Point

Testing a Manual Call Point

Push the test key through the hole in the underside of the call point to engage the test cam mechanism and push to operate the cam mechanism.

At this point the test key is retained in the call point and pulling it out will reset the glass.

NOTE: The appropriate voice alarm messages and sounders, where appropriate in the system will be activated by this test. To **silence alarms** and **reset** the system, see **Automatic Fire** part of this manual.

Replacing a broken Glass

WARNING: Take appropriate precautions when clearing broken glass to prevent injury.

NOTE: A weather resistant version of manual call points will have two gaskets, a Cover/glass gasket and a Spacer/cover gasket, which must be installed in their respective position.

These procedures assume the cover on the manual call point is open and any broken glass has been cleared.

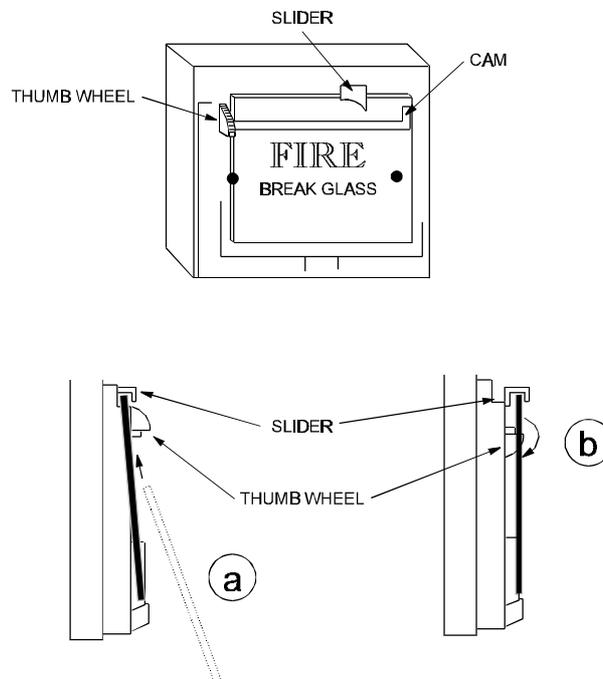


Figure 1-1 Replacing a broken MCP glass

emf1216

- a) Feed the glass upward to push the cams down and fit under slider, locate bottom of glass into recess.
- b) Hold the bottom of glass in position and rotate the thumbwheel quadrant to raise the top of the glass.
- c) Fit the call point cover by hooking it into the top of the unit and making sure that the glass is properly seated (held down) tighten the cover fixing screw.

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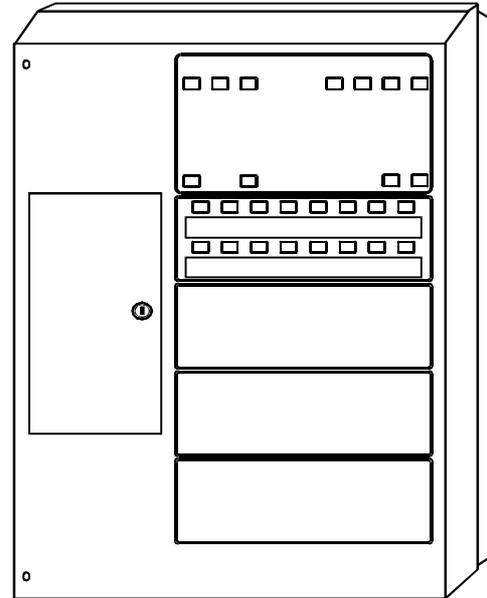
System 3400-Orator equipment

Orator II voice alarm control equipment

The integration of Orator II-voice alarm and the system 3400 introduces three equipment types requiring user intervention in its day to day operation, these are the:

Audio control unit (ACU)

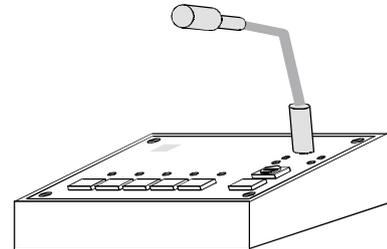
The unit has manual controls to allow announcements of live and stored messages to user selected zones (areas) of the protected site. The live announcements are made using the integral fireman's microphone. The stored announcements are made using information held in digital message stores. Messages that are stored include the standard evacuate and alert, plus up to four site-specific auxiliary messages.



13425-01 Audio Control Unit

Four zone microphone unit (DAU)

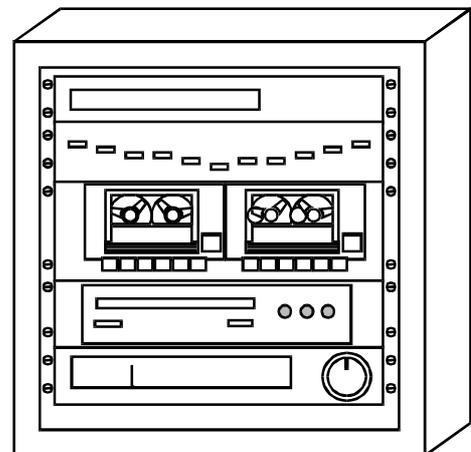
This unit works with distributed amplifier unit(s) to allow announcement to local zones associated with the DAUs. The microphone may be installed for **fire** or **public address** applications.



13427-04 4-Zone Microphone Unit

Entertainment system

Audio system for background music may be connected to distributed amplifier unit(s) to provide *low priority* output broadcast to the voice alarm system. The entertainment equipment can consist of commercially available rack mounted cassette tape, compact disk and radio modules.



Entertainment system

Figure 2-1 Orator equipment

cdm83

System 3400 fire equipment

The operation of the control and indicating equipment of the 3400 fire system are covered in the *3400 (with 34000 devices) Operating manual*.

The integration of System 3400-Orator II voice alarm requires access to controls at an **audio control unit** and a **3400 panel**. A 3400 panel may be a 3404, 3408, 3450 and 3505. This manual covers how to control the operation of an integrated system.

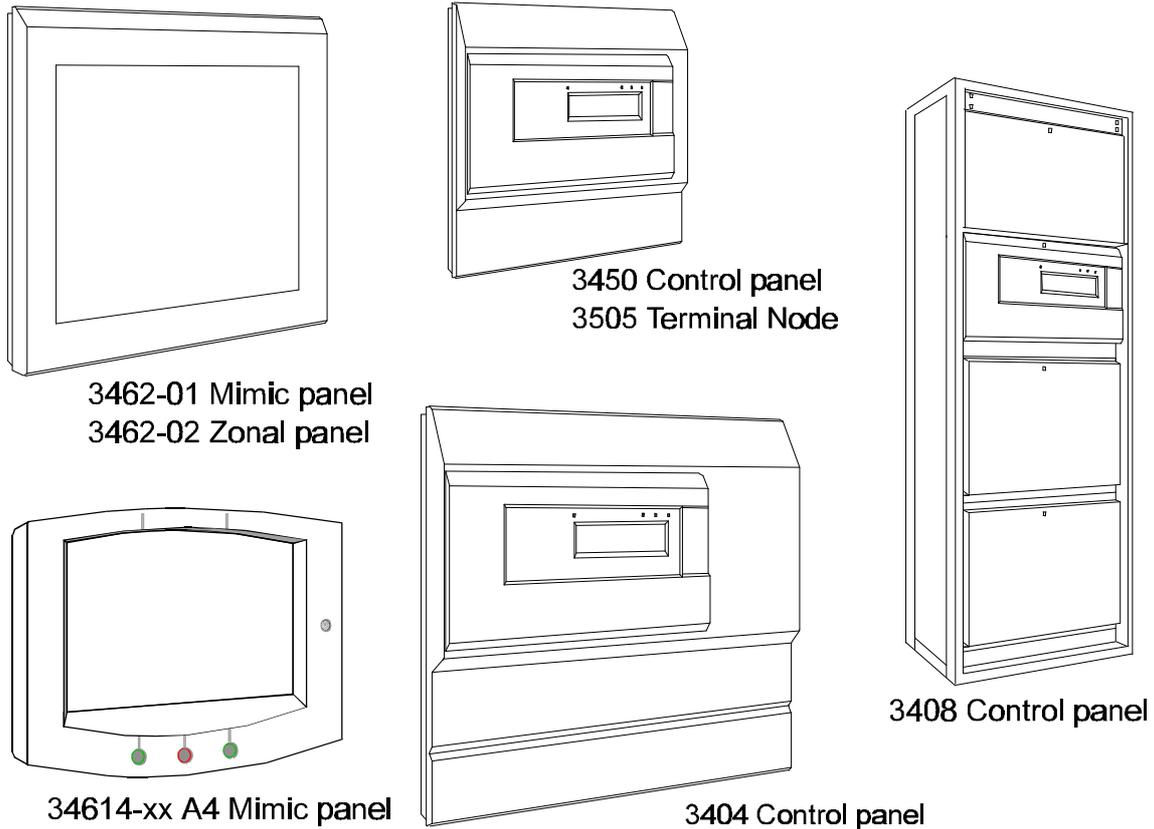


Figure 2-2 System 3400 equipment

f1381

Controls and indications

The integration of System 3400-Orator II requires access to controls at both **3400 panel** and the **audio control unit**, which are normally installed next to each other.

Upon detection of a fire in the protected site the **3400 fire control panel** indicates the fire event and actions the voice alarm equipment to announce pre-recorded fire evacuate and alert messages to affected areas.

3400 panel

A 3400 panel may be a 3404 or 3408 Fire control panel, 3450 Repeat panel or 3505 Terminal node.

The control and indications on the panel includes SOUND ALARMS, SILENCE ALARMS and RESET controls, plus a message display and lights to indicate system status.

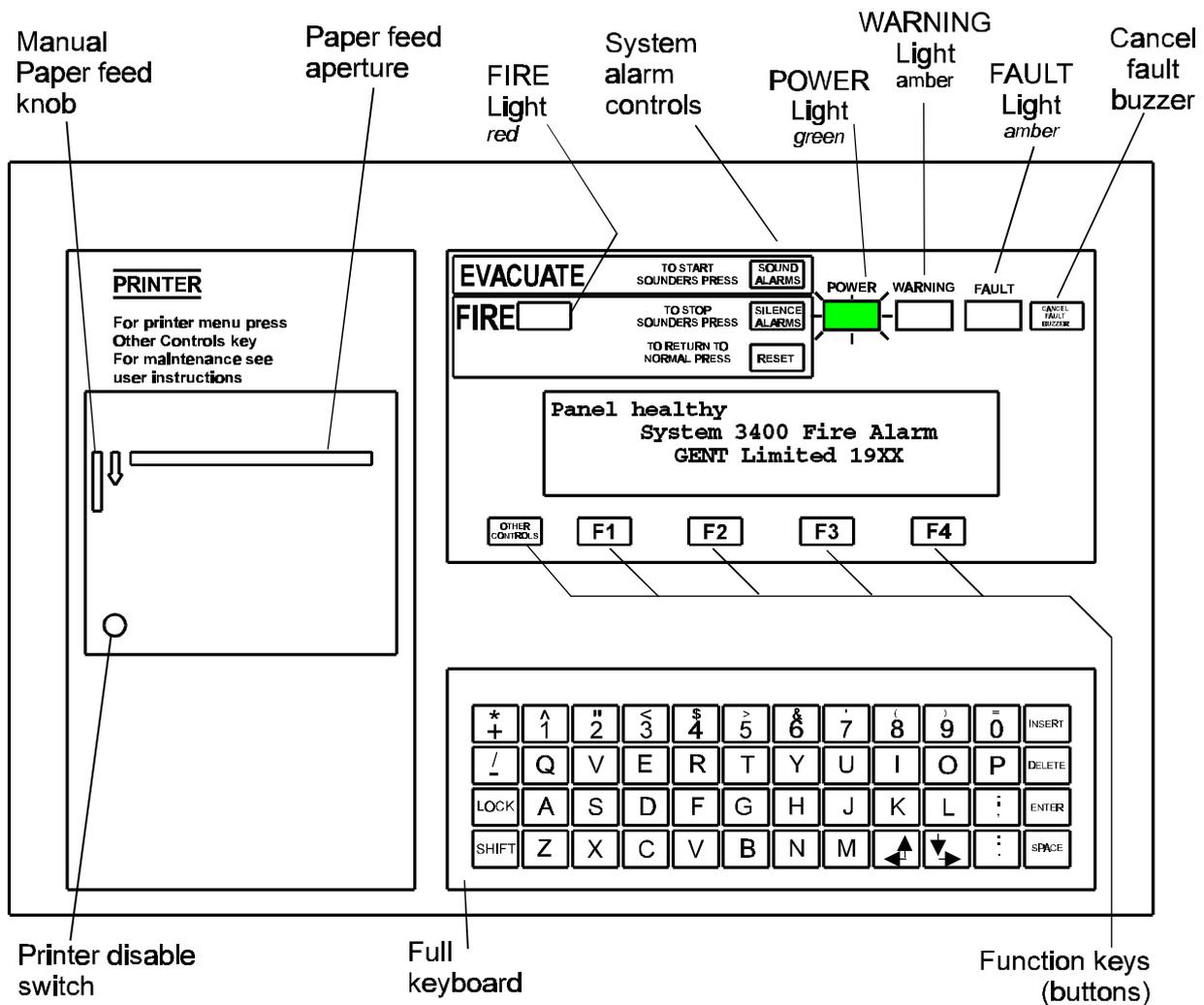


Figure 3-1 3400 panel controls and indications

cdm198

Audio Control unit

The Audio control unit provides status indications and has controls to allow manual activation of live or stored announcements to the voice alarm system.

Along with the system status indications of *audio loop, power, common fault and slave ACU* conditions, there are colour coded zone indicators to show when a zone is announcing live or pre-recorded messages.

The live messages are from the integral microphone located behind a door on the enclosure of an Audio control unit. Also each ACU can hold up to four **auxiliary messages** that can be activated manually for announcement in the system. In addition there are digital stores in each DAU for announcement of **fire-evacuate** and **fire-alert** messages in the system.

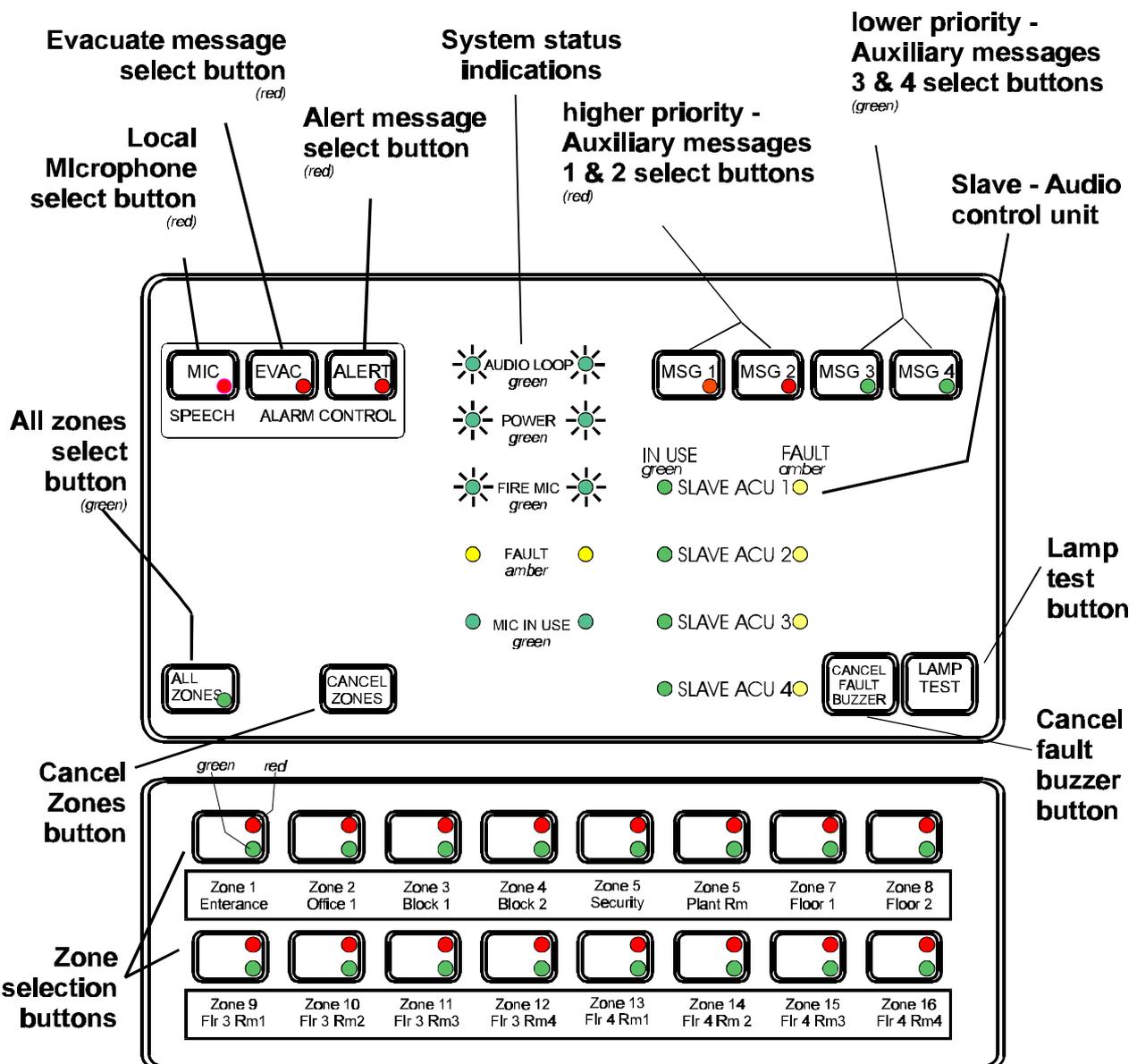


Figure 3-2 ACU controls and indications

cdm96

Four Zone Microphone Unit

The four zone desktop microphone unit works in conjunction with distributed amplifier unit(s), it has controls to allow live announcements to associated DAU zones.

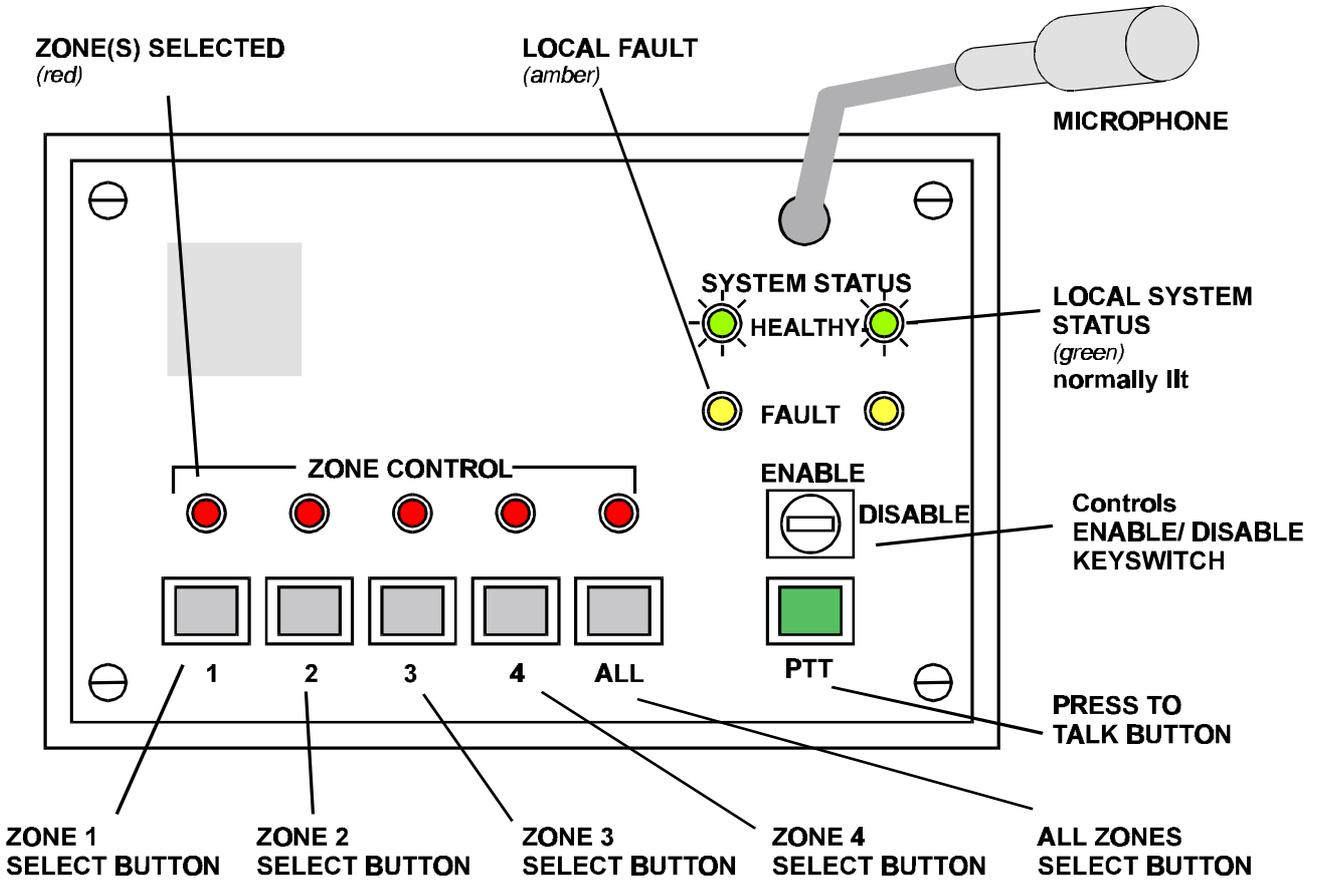


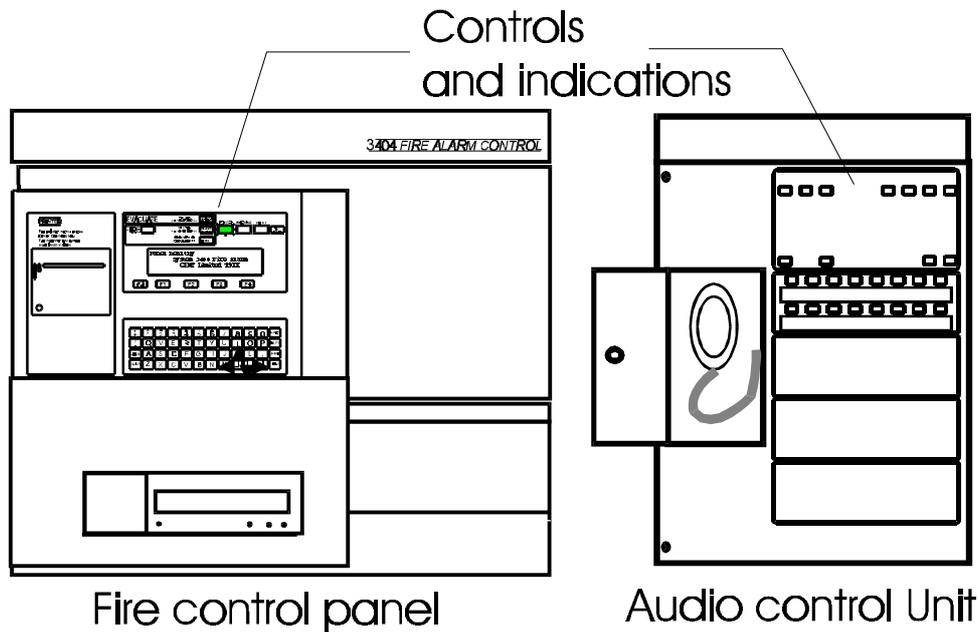
Figure 3-3 Four zone microphone unit

cdm86

Entertainment system

For information on operating the entertainment equipment see the instructions supplied equipment.

Quick reference



To silence the voice announcements

At the Fire Control panel

Using the keys supplied with the panel open the door to gain access to the controls.

Press the **silence alarms** button.



To Reset the 3400-Orator II system

At the fire Control panel

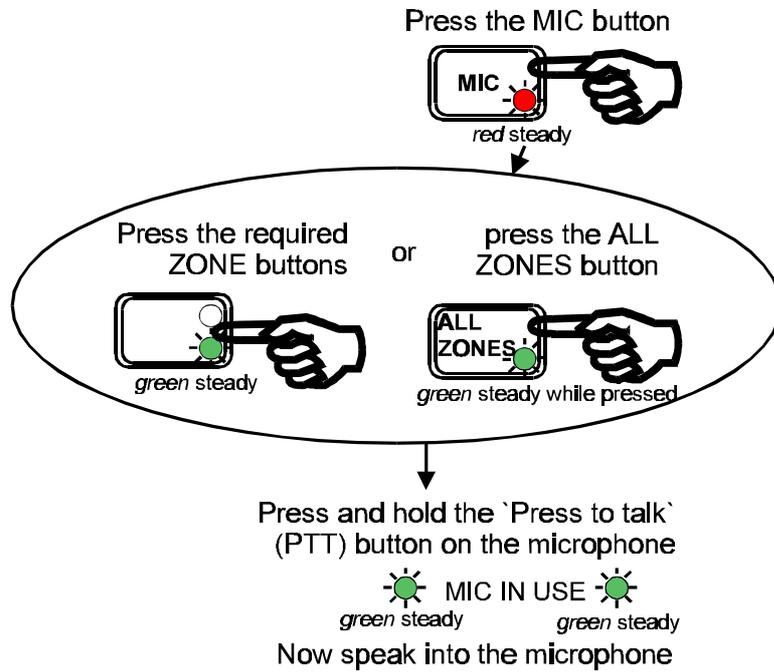
Ensure the door to gain access to the controls at the panel is still open

Press the Reset button



To operate the ACU Microphone

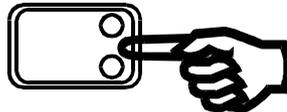
At the Audio Control unit
Enable controls by opening the microphone compartment door



To deselect the microphone zones

At the Audio Control unit

Press the appropriate active ZONE button to deselect the zone



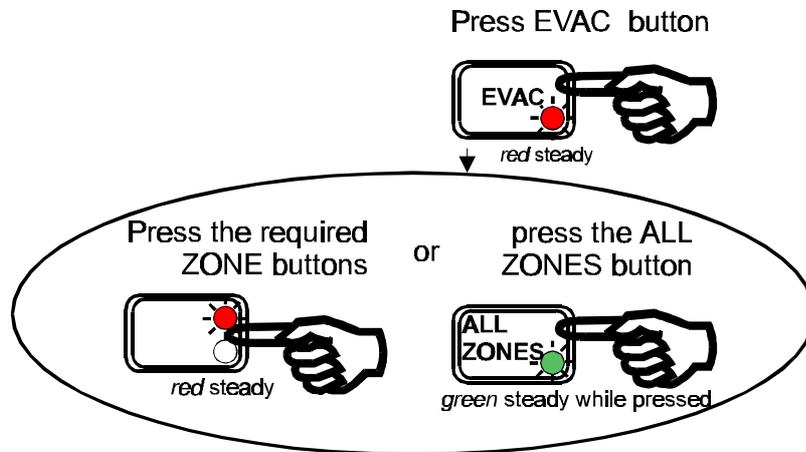
Notice its lit red or green indicator will switch off

Or press the CANCEL ZONES button.



To announce evacuate messages

At the Audio Control unit
Enable controls by opening the microphone compartment door



To silence the voice alarm

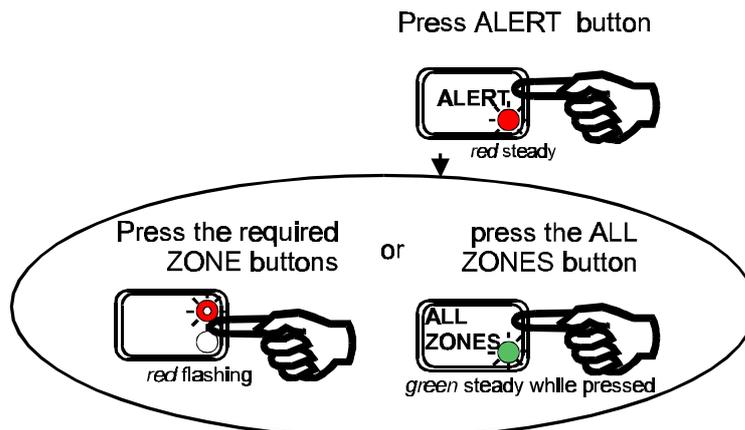
At the Fire Control panel
Using the keys supplied with the panel open the door to gain access to the controls.

Press the **silence alarms** button.



To announce Alert messages

At the Audio Control unit
Enable controls by opening the microphone compartment door



To silence the voice alarm

At the Fire Control panel
Using the keys supplied with the panel open the door to gain access to the controls.

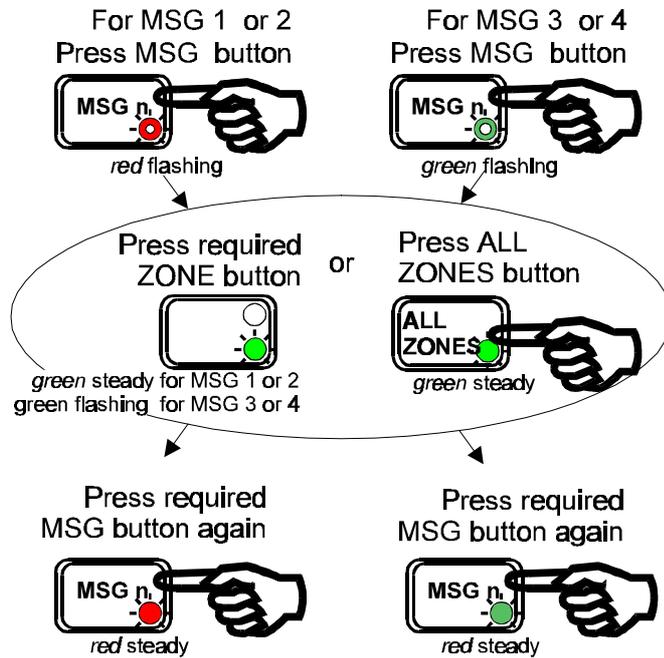
Press the **silence alarms** button.



To announce auxiliary messages 1, 2, 3 or 4

Audio Control unit

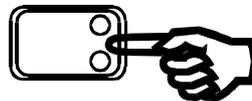
Enable controls by opening the microphone compartment door



To deselect auxiliary message announcement to zones

At the Audio Control unit

Press the appropriate active ZONE button to deselect the zone



Notice it's lit red or green indicator will switch off

Or

press the CANCEL ZONES button.



To perform a lamp test at the ACU

At the Audio Control unit
Enable controls by opening the microphone compartment door

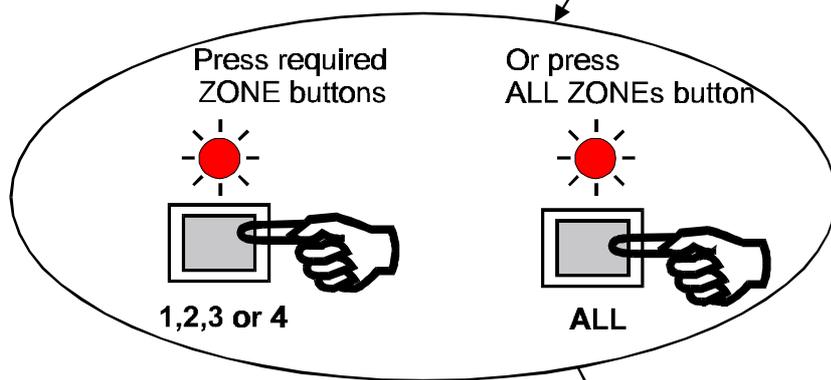
Press the LAMP TEST button



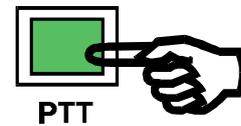
the lamps will remain ON for 10 seconds duration
Note: The buzzer is not tested.

To operate the four zone microphone unit

At the four zone microphone unit
Enable the controls by operating the keyswitch



Press and hold the 'Press to talk' PTT button



Now speak into the microphone

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Voice alarm priority

Announcement priority

The voice alarm system can have multiple audio inputs from different sources, such as microphones, digital message stores and entertainment equipment in the system.

A higher priority is given to fire related messages, with a lower priority for other non-emergency announcements, such as public address and background music.

Priority 1.. is given to **live speech** from the integral **fireman's microphone** at the slave or master *audio control unit*.

Priority 2.. is also given to **auxiliary messages 1 and 2** which are stored in the master or slave *audio control unit*. These messages may be used for bomb alert applications.

Priority 3.. is given to **live speech** from the **fireman's microphone** connected to **channels 1 and 2** of the *distributed amplifier unit*.

Priority 4a.. is given to **fire evacuation message** announcements

The evacuation messages are stored in each *distributed amplifier unit*. The message announcement is either **triggered automatically** by the 3400 fire detection system in the event of a fire or can be manually activated by means of **operating controls** at the *audio control unit*.

Priority 4b.. is given to **fire alert message** announcements

The alert messages are stored in each *distributed amplifier unit*. The message announcement is either **triggered automatically** by the 3400 fire detection system in the event of a fire or can be manually activated by means of **operating controls** at the *audio control unit*.

Priority 5.. is given to **live speech** from the integral **PA microphones** connected to **channels 3** of the *distributed amplifier unit*.

Priority 6.. is given to **live speech** from the integral **PA microphones** connected to **channels 4** of the *distributed amplifier unit*.

Priority 7.. is given to **auxiliary messages 3 & 4** which are stored in the *audio control unit*. These messages may be used for non emergency announcements.

Priority 8.. is given to **background music** from an entertainment system.

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Automatic FIRE announcements

Automatic Fire condition

In a fire condition the evacuate and alert voice messages are automatically activated for announcement throughout a protected site, via loudspeakers.

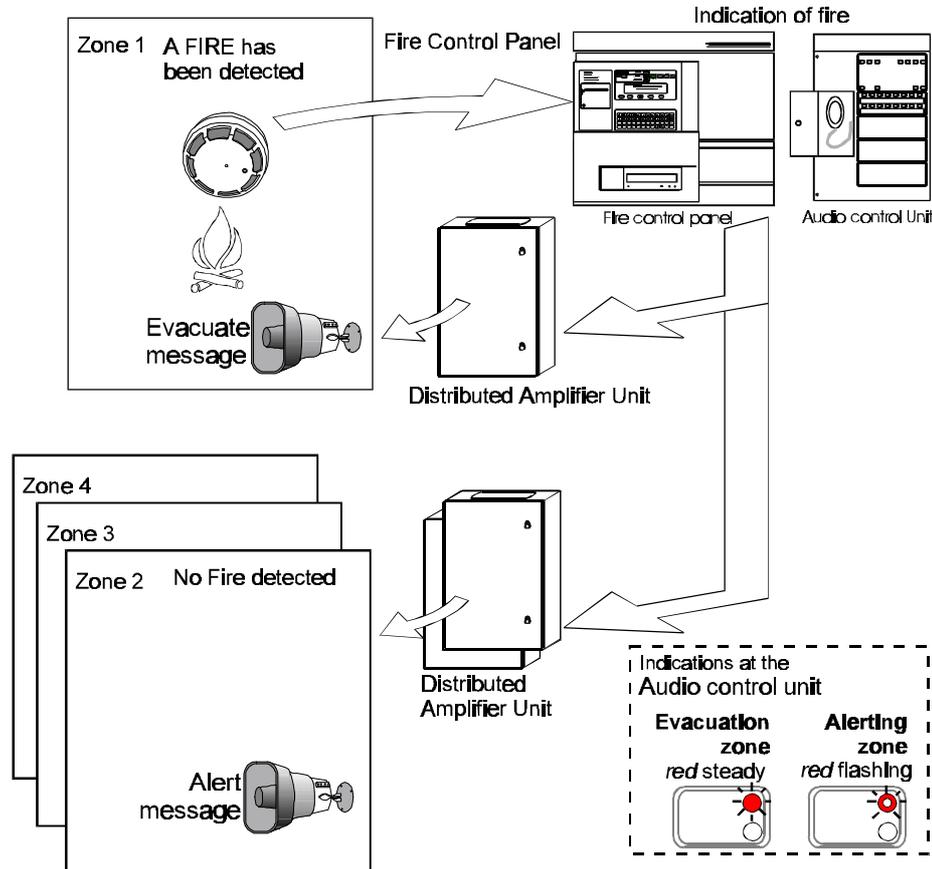


Figure 6-1 Automatic fire alarm

cdm87

Evacuate message

3400 evacuate tone - silence - followed by the message

*“ Attention please, Attention please.
Fire has been reported in the building.
Please leave the building immediately by the nearest exit.”*

silence - and the sequence is repeated

Alert message

3400 alert tone - silence - followed by the message

*“ May I have your attention please, may I have your attention please. Fire has been reported in the building.
While the report is being investigated please remain at your work place .”*

silence - and the sequence is repeated

To silence the voice alarm messages

With the emergency over the voice alarm system fire messages can be silenced.

At the Fire control panel

- a) Open the **silver door** on the control panel to gain access and to enable the controls.
- b) Press the SILENCE ALARMS button.

Notice the voice alarm is **silenced** and the local **fire buzzer** gives an intermittent sound, plus the display gives an **'Alarms Silenced'** message.

At the Fire Control panel
Using the keys supplied with the panel open the door to gain access to the controls.

Press the **silence alarms** button.



At the Audio control unit

Notice the indications return to those given before the fire condition.

cdm97

Figure 6-2 To silence voice alarms

To Reset the 3400 Orator II system

Prior to resetting the fire alarm system, any excess heat and smoke must be cleared from the fire sensors initiating the fire conditions. Where a **manual call point glass** has been broken this must be replaced.

With the alarm activating device cleared for normal operation:

At the Fire control panel

- a) Ensure the silver is door still open.
- b) Press the RESET button.

Notice the display gives the following message:

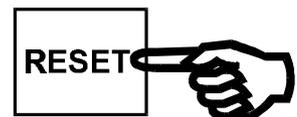
'Sounders stopped System being Reset - please wait.....'

The indications prior to the fire condition are restored after a short delay.

- c) Close and lock the silver door.

At the fire Control panel
Ensure the door to gain access to the controls at the panel is still open

Press the Reset button



Log Book

All fire events must be recorded in the **Log Book** provided.

Figure 6-3 To reset the fire system
cdm98

Microphone at Audio control unit

Live Fire announcements

The fireman’s microphone at the audio control unit is used to announce **live messages** to guide people away from **fire** within the protected site.

How to use the fireman’s microphone

- a) Open the microphone compartment door using the key supplied with the unit, this will enable controls at the unit.
- b) Press the microphone button marked MIC. Notice its *red* light is lit.
- c) Select the zones to which live announcements are to be made, by pressing the appropriate ZONE button(s). Notice the buttons *green* light is lit.

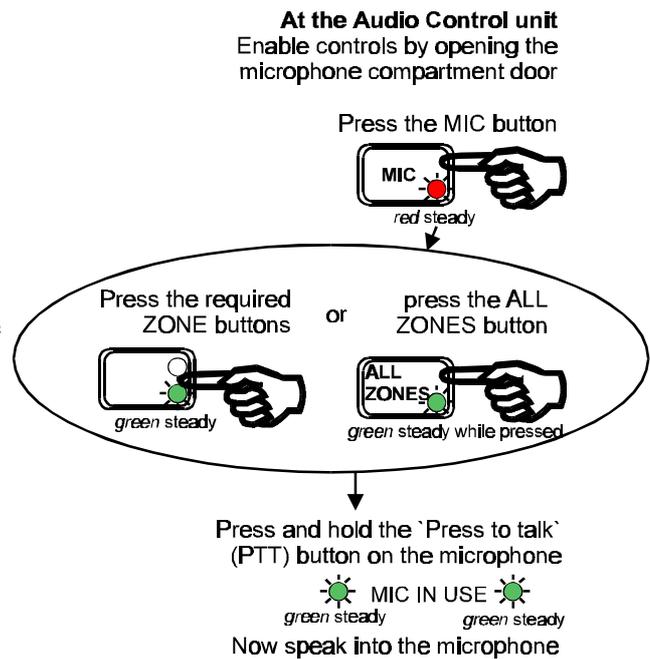
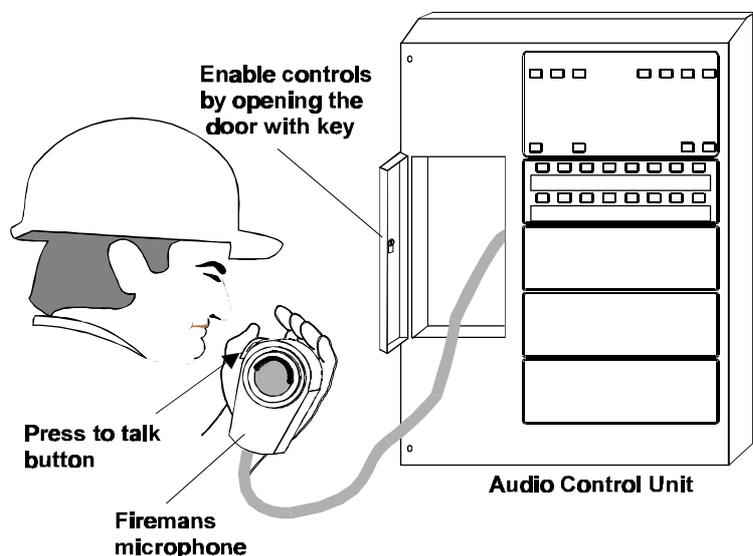


Figure 7-2 To announce live messages

cdm99

If live announcement is to the whole site then press the ALL ZONES button, notice its *green* light is lit until the button is released. All the ZONE button’s *green* lights are lit.

Figure 7-1 Using the microphone



cdm88

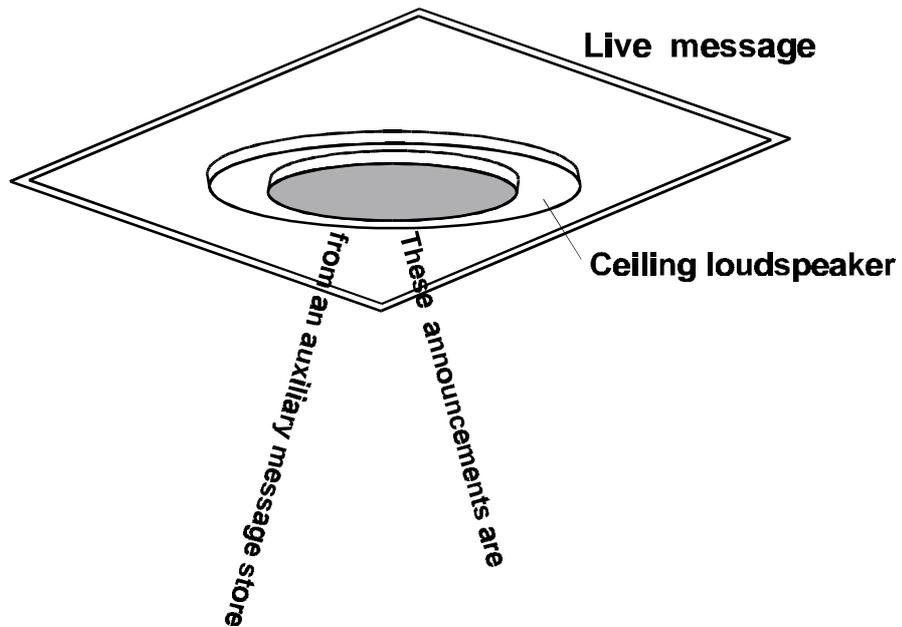


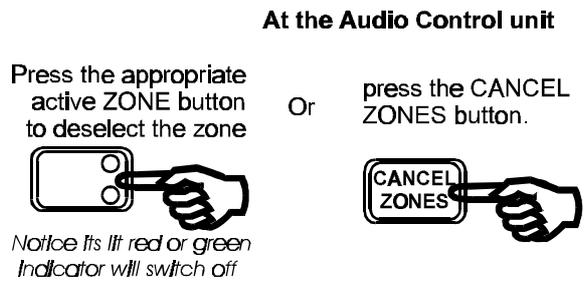
Figure 7-3 Live messages

cdm200

- d) Holding the microphone close to mouth and press the ‘**Press to talk - PTT**’ button. Notice ‘**MIC IN USE**’ *green* lights are lit. Now speak into the microphone to make the live announcement.
- The live speech will be announced to the selected zones of the protected site.
- e) On completing the announcement release the PTT button on the microphone.

To deselect microphone zones

- a) Ensure the PTT button on the microphone has been released.
- b) Press the appropriate ZONE button to deselect the respective zone. Notice the ZONE button’s *green* light switches Off.



Or Press the CANCEL ZONES button to deselect all the microphone zones.

cdm100

Figure 7-4 To silence voice messages

On completion Return the microphone in the unit enclosure and close door.

Fire Evacuate announcements

Fire Evacuate messages from Audio control unit

The fire evacuation messages may be manually triggered for announcement to selected zones of a protected site.

How to manually trigger the evacuation messages

- a) Open the microphone compartment **door** using the key supplied with the unit, this will enable controls at the unit.
- b) Press the 'EVAC' button, notice the *red* light on the button is lit.
- c) Select the zones to which evacuation announcements are to be made, by pressing the appropriate ZONE button(s). Notice the *red* light on the selected button is lit.

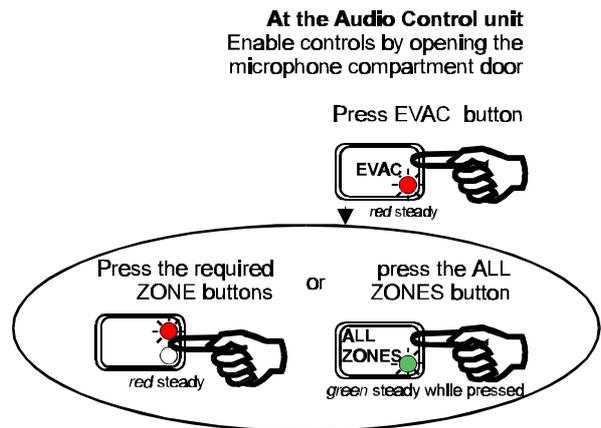
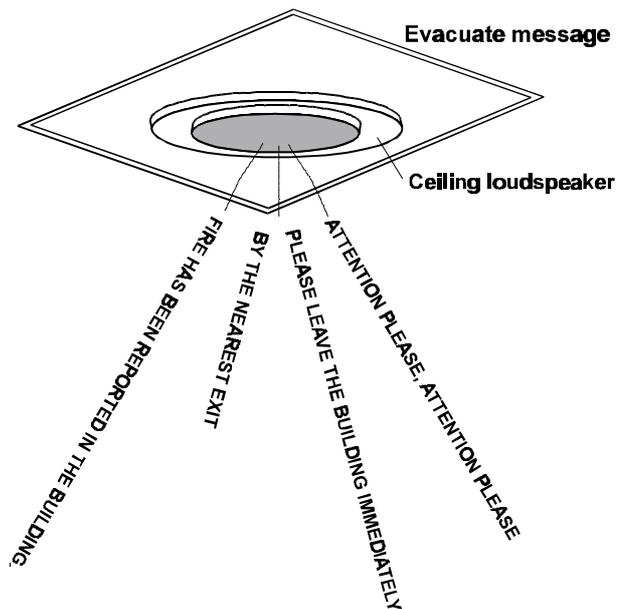


Figure 8-1 To trigger evacuate messages

If announcement is to the whole site then press the ALL ZONES button, notice its green light is lit until the button is released. All the ZONES button's *red* lights are lit.

Figure 8-2
Evacuate
message



cdm89

NOTE: The standard Evacuate message will be announced to the selected areas of the protected site.

Evacuate message

3400 evacuate tone - silence - followed by the message

*“ Attention please, Attention please.
 Fire has been reported in the building.
 Please leave the building immediately by the nearest exit.”*

silence - and the sequence is repeated

To silence the fire evacuate announcements

With the emergency over the voice alarm system fire messages can be silenced.

At the Fire control panel

- a) Open the **silver door** on the control panel to gain access and to enable the controls.
- b) Press the SILENCE ALARMS button.

Notice the voice alarm is **silenced** and the local **fire buzzer** gives an intermittent sound, plus the display gives an '**Alarms Silenced**' message.

At the Fire Control panel
 Using the keys supplied with the panel open the door to gain access to the controls.

Press the **silence alarms** button.



Figure 8-3 To silence voice messages cdm97

At the Audio control unit

Notice the indications return to those given before the fire condition.

Fire Alert announcements

Fire Alert messages from Audio control unit

The fire alert messages may be manually triggered for announcement to selected zones of a protected site.

How to manually trigger the alert messages

- a) Open the microphone compartment **door** using the key supplied with the unit, this will enable controls at the unit.
- b) Press the 'ALERT' button, notice the *red* light on the button is lit.
- c) Select the zones to which alert announcements are to be made, by pressing the appropriate ZONE button(s). Notice the *red* light on the selected button is flashing.

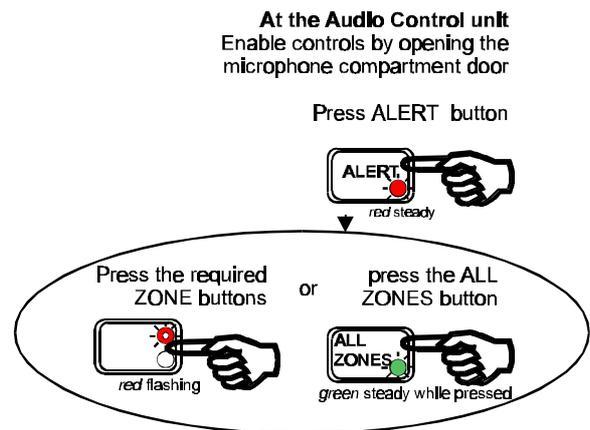


Figure 9-1 To trigger Alert announcements

cdm197

If announcement is to be made to the whole site then press the ALL ZONES button, notice *green* light is lit until the button is released. All the ZONES *red* lights are flashing.

NOTE: The standard alert messages are announced in the selected zones of the protected site.

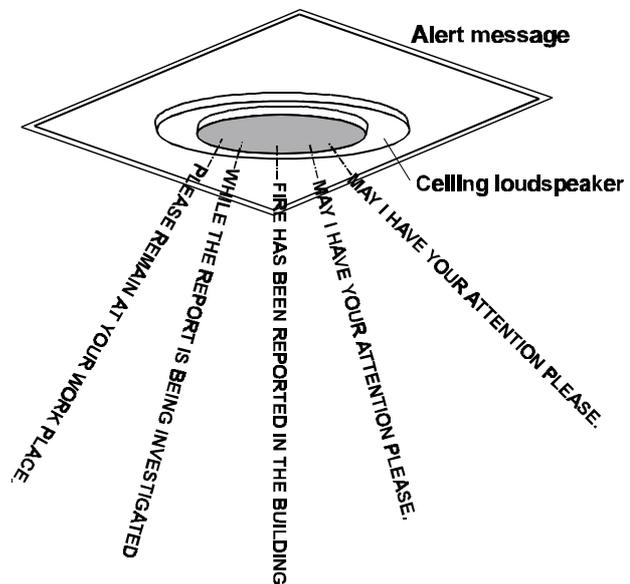


Figure 9-2 Alert announcements

cdm90

Alert message

3400 alert tone - silence - followed by the message

“ May I have your attention please, may I have your attention please.

Fire has been reported in the building.

While the report is being investigated please remain at your workplace.”

silence - and the sequence is repeated

To silence the alert announcements

With the emergency over the voice alarm system fire messages can be silenced.

At the Fire control panel

- a) Open the **silver door** on the control panel to gain access and to enable the controls.
- b) Press the SILENCE ALARMS button.

Notice the voice alarm is **silenced** and the local **fire buzzer** gives an intermittent sound, plus the display gives an **'Alarms Silenced'** message.

At the Fire Control panel
Using the keys supplied with the panel open the door to gain access to the controls.

Press the **silence alarms** button.



Figure 9-3 To silence voice messages

At the Audio control unit

Notice the indications return to those given before the fire condition.

Auxiliary message announcements

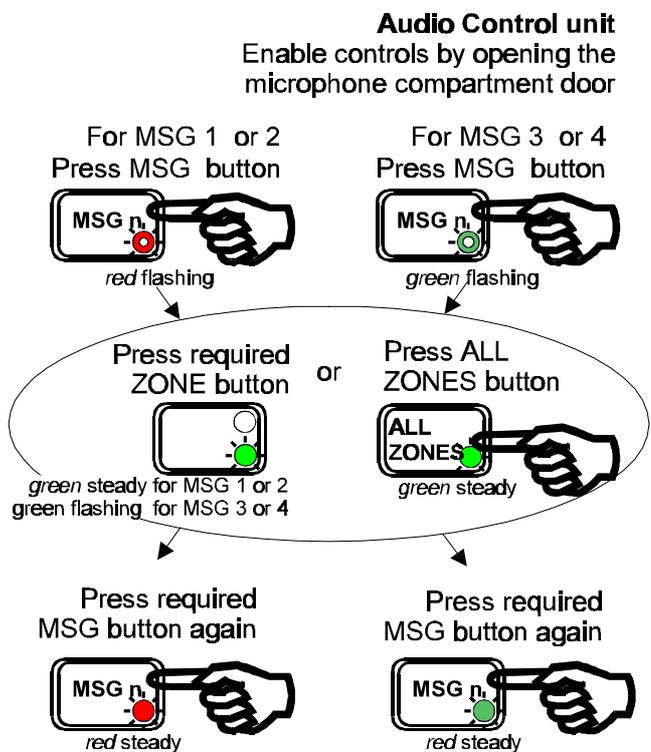
Auxiliary messages from the Audio control unit

Any one of the **four auxiliary** messages may be manually triggered for announcement to selected zones of a protected site.

NOTE: Only one auxiliary message can be announced at any one time.

How to manually trigger auxiliary messages

- a) Open the microphone compartment door using the key supplied with the unit, this will enable controls at the unit.
- b) Press the required 'MSG' button, notice its *red* or *green* light is flashing.
- c) Select the zones to which auxiliary announcements are to be made, by pressing the appropriate ZONE button(s). Notice the *green* light on the selected button is either steady or flashing.



cdm199 Figure 10-1 To trigger auxiliary messages

If announcements are to be made to the whole site then press the ALL ZONES button, notice its green light is lit until the button is released. All the ZONE button's green lights are either steady or flashing.

- d) Now press again the selected 'MSG' button to activate the announcements.

NOTE: The custom auxiliary message will be announced to the selected zones of the protected site.

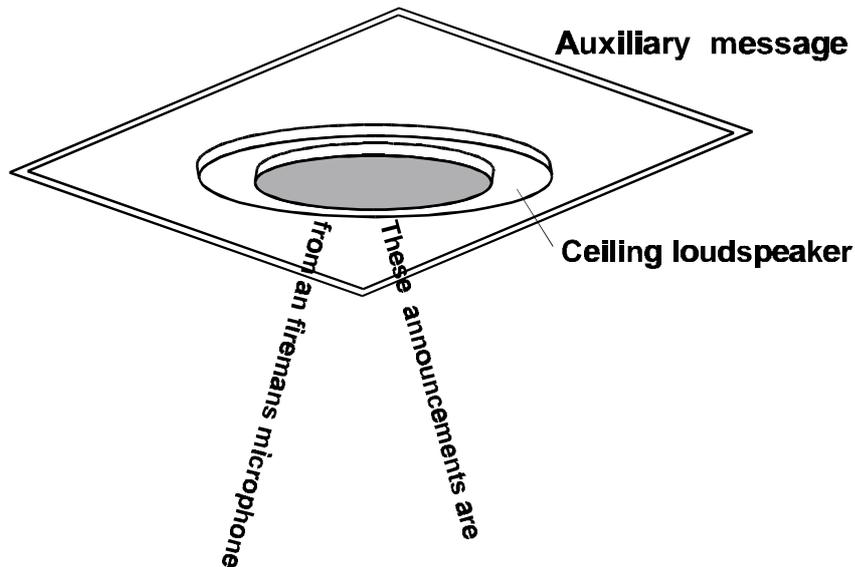


Figure 10-4
Auxiliary
message

cdm91

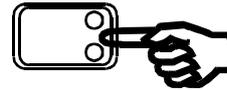
To deselect an auxiliary message zone

- a) Press the appropriate ZONE button to deselect the respective zone. Notice the ZONE button's *red or green* light switches Off.

Or Press the CANCEL ZONES button to deselect all the zones.

At the Audio Control unit

Press the appropriate active ZONE button to deselect the zone



Notice its lit red or green indicator will switch off

Or

press the CANCEL ZONES button.

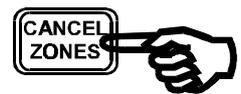


Figure 10-2 To cancel zone(s)

cdm100

To silence the auxiliary messages

The auxiliary messages can be silenced at any time.

At the Fire control panel

- a) Open the **silver door** on the control panel to gain access and to enable the controls.
- b) Press the SILENCE ALARMS button.

Notice the voice alarm is **silenced** and the display gives an '**Alarms silenced**' message.

At the Fire Control panel

Using the keys supplied with the panel open the door to gain access to the controls.

Press the **silence alarms** button.



At the Audio control unit

Notice the indications return to those given before the auxiliary message announcement.

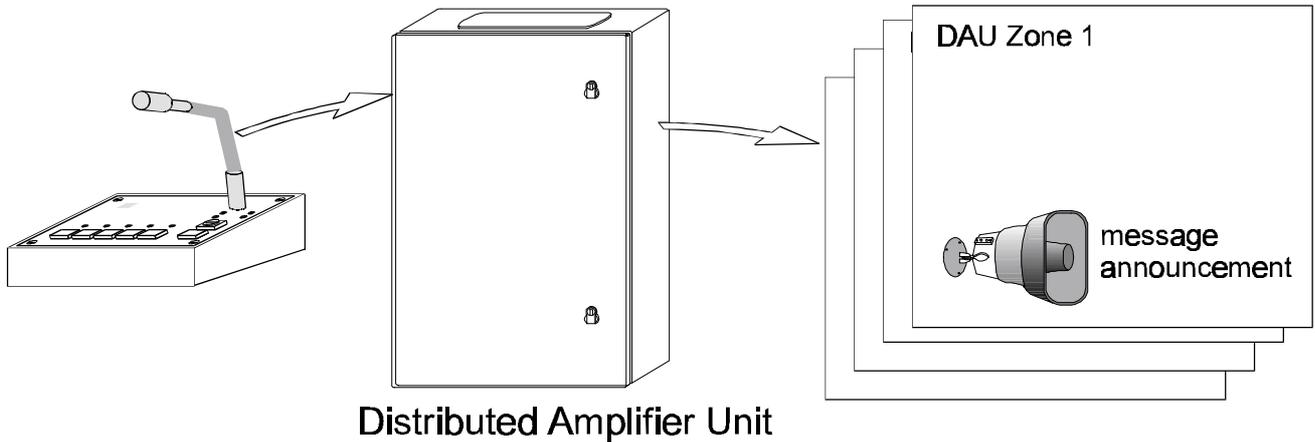
Figure 10-3 To silence voice messages

cdm97

Four zone microphone unit

To announce live FIRE or PA messages

The four zone microphone unit is used announce **live messages**, for fire as well as public address applications.



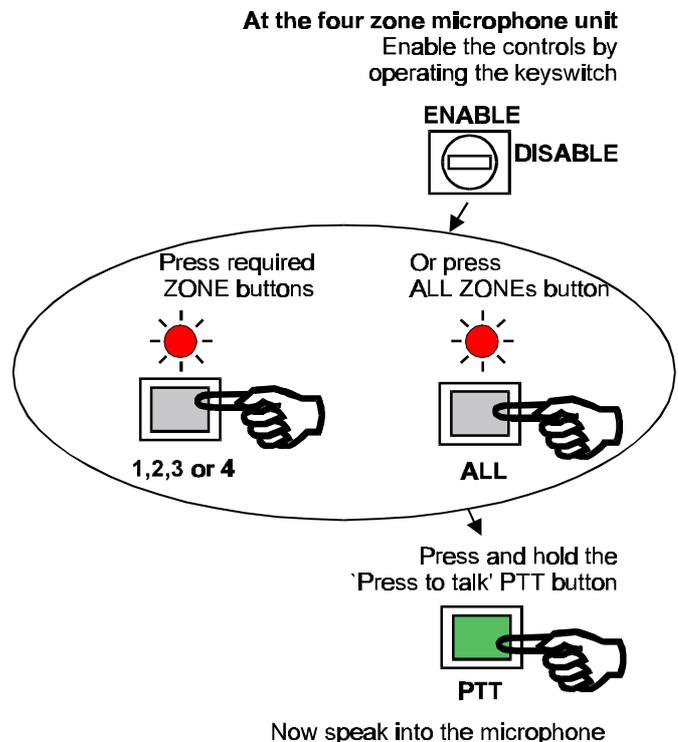
cdm94

Figure 11-1 Four zone microphone announcement path

How to use the four zone microphone unit

- a) Enable the controls by operating the keyswitch on the microphone unit.
- b) Select the DAU-zones to which live announcements are to be made, by pressing the appropriate ZONE button(s). Notice the *red* light is lit above to the selected button.

If live announcement is to all the zones then press the ALL button, notice its *red* light is lit until the button is released. All the ZONE button's *red* lights are lit.



cdm201

Figure 11-2 Selecting the DAU zones

- d) With the mouth close to the microphone, press and hold the **'Press to talk - PTT'** button. Now speak into the microphone to make the live announcements to the DAU zones.

The live speech will be announced to the selected DAU zones of the protected site.

- e) On completing the announcement release the PTT button and disable the controls on the microphone unit.



Fault indications

Fault indications at an Audio control unit

When the FAULT lights are lit, this indicates a common fault in the system or at the ACU.

When one of the 'SLAVE ACU' - FAULT light is lit, this indicates a local fault associated with the respective Slave Audio control unit.

Fault indications at the Audio control unit

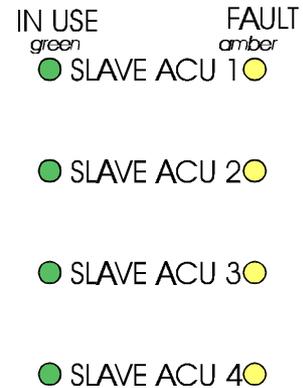


Figure 12-1 Fault indications at ACU

How to perform a Lamp Test

- a) Open the microphone compartment door to enable controls at the Audio control unit.
- b) Press the 'LAMP TEST' button. Notice all the lights at the Audio control unit are lit for a short duration.

At the Audio Control unit
Enable controls by opening the microphone compartment door

Press the LAMP TEST button



the lamps will remain ON for 10 seconds duration
Note: The buzzer is not tested.

Figure 12-2 Lamp test at ACU

Faults at a Distributed Amplifier unit

There are no other external indications given at the DAU, however DAU faults are announced at the 3400 Fire control panel.

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Background Music

For information on operating the CD, Tape or Radio see the information supplied with the entertainment system.

License to play background music

If background music is being played from CDs or Tapes then it is a legal requirement (1988 Copyright Design and Patent act) to obtain the appropriate license by contacting the Performing Right Society.

Orator system

Where an entertainment system is connected to distributed amplifier units in the Orator II system, the respective DAU zones will broadcast live music from the CD, Tape or Radio of the entertainment system rack.

Priority

The background music broadcast is a lowest priority audio and therefore in the event of a Fire or PA announcement the background music is automatically switched off.

The music is automatically restored on completion of a high priority announcement.

Disablement during mains failure

During mains failure period the **Public Address** and **Background music** is automatically disabled.



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System 3400 Orator II

Introduction

This section lists the commercially available parts for use in the System 3400 Orator II.

Audio Control Units

	13425-01	ACU 16 zone
ancillaries	13425-20	ACU 16 Zone extender set (includes 16-zone keyboard card and ribbons for use with Master or Slave ACU)
	13425-25	ACU Slave interface kit (includes Slave boards, ribbon cables and FPGA Chip)
	13426-04	Message store module/card (excludes message chip) (optional for use in DAU and ACU)
	13426-50	Message EPROM chip (Custom)
	13425-31	ACU-3400 Loop I/O module (interface)
	4015-514	Battery 12V 12Ah

Distributed Amplifier Unit

DAU (un- populated)	13426-01	DAU base unit (includes case, power supply and motherboard)
Cards/ Boards	13426-02	DAU 3400 loop I/O module/card
	13426-03	DAU Audio Highway I/O loop module/card
	13426-05	DAU Local (4-channel) microphone card/module
	13426-06	DAU Background music card/module
	13426-10	DAU Message store (Evacuate/commission)
	13426-11	DAU Message store (Alert/commission)
	13426-04	DAU Message store (no message)
Messages	13426-30	Message EPROM (standard) Evacuate
	13426-31	Message EPROM (standard) Alert

	13426-50	Message EPROM chip (Custom)
Amplifier modules	13426-81	Amplifier module 2 x 50W c/w line transformers and end-of-line units
	13426-82	Amplifier 4 x 50W module c/w line transformers and end-of-line units
	13426-83	Amplifier 2 x 100W module c/w line transformers and end-of-line units
	13426-84	Amplifier 1 x 250W module c/w line transformers and end-of-line units
Spare and ancillaries	13427-01	Orator End-of-line unit
	13427-04	DAU Local 4-channel microphone
	05795-38	Battery 12V 38Ah 1-off (but 2 required for DAU)

Public address ancillaries

Options	13428-01	Mixer preamplifier 6 Inputs (2U)
	13428-02	Graphic equaliser (2U)
	13428-03	AM / FM Tuner (1U)
	13428-04	Cassette player - twin desk auto reverse (3U)
	13428-05	CD Player - 10 disc capacity (3U)
	13428-06	Monitor panel to facilitate source set up (2U)
Racks	13428-12	Rack, 12U to accept PA equipment, pre-wired
	13428-16	Rack, 16U to accept PA equipment, pre-wired
	13428-20	Rack, 20U to accept PA equipment, pre-wired
	13428-34	Rack, 34U to accept PA equipment, pre-wired
	13428-43	Rack, 43U to accept PA equipment, pre-wired

Speakers

13421-12	Orator 6W Ceiling speaker (with aluminium fire dome)
13421-13	Orator 6W Ceiling speaker (with steel fire dome)
13421-14	Orator 6W Ceiling speaker (with steel fire dome and ceramic terminals on chassis)
13421-15	Orator 6W Ceiling speaker (with steel fire dome and ceramic terminals on bracket)
13421-20	Orator 4W metal Cabinet loudspeaker (surface mounting)
13421-21	Orator 6W metal Cabinet loudspeaker (surface mounting)
13421-25	Orator 6W metal Cabinet loudspeaker (flush mounting)
13421-30	Orator 6W metal cabinet Bi-directional speaker
13421-51	Orator 20W metal column speaker
13421-52	Orator 30W metal column speaker
13421-70	Orator 10W projector
13421-71	Orator 20W bi-directional projector
13421-40	Orator 15W metal Horn speaker IP67
13421-41	Orator 30W metal Horn speaker IP67
13421-42	Orator 10W plastic Horn speaker
13421-43	Orator 20W plastic Horn speaker
13421-44	Orator 20W music quality Horn speaker
13421-80	Orator 20W Pendant sphere
13427-01	Orator End-of-line (EOL) Unit

3400 panel cards

13430-11V3+	Local controller card V3+ (LCC)
13431-01V3	Loop processor card (LPC)
13433-01V3	1 - 4 Loop panel RAM card
13433-03V3	1 - 8 Loop panel RAM card
13501-01	Secure network card
13532-50	Universal I / O card V3
13532-53	Slave I/O card

Manuals

13499-30	System 3400 Orator II Installation manual
13499-32	System 3400 Oraotr II Operator's manual