GENT
by Honeywell
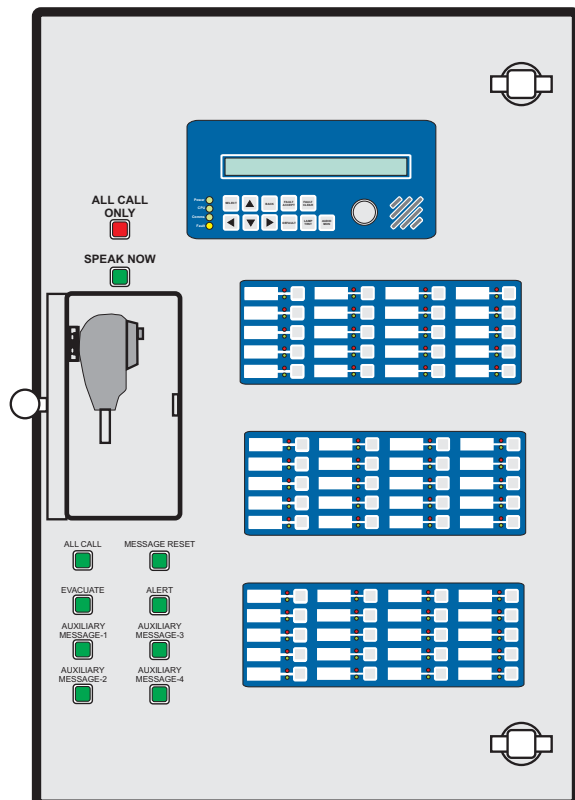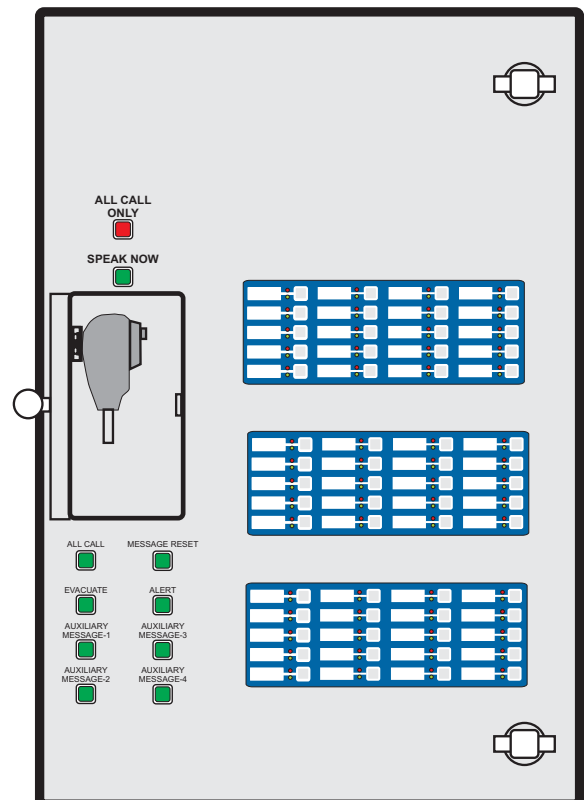
Vigilon Voice - Audio Control Units

Data, Installation and Operation

Audio Control unit (ACU)

Slave Audio Control unit (Slave ACU)

Table of Contents

Description

The Vigilon Voice Audio Control Unit forms a central control point for controlling the routing of audio in the Networked Vigilon Voice System.

The unit can have a configurable number (20,40 or 60) of zone select button fitted to work in conjunction with the inbuilt Emergency microphone and local DVA messages. Local DVA messages include Evacuate, Alert and Auxiliary messages.

These buttons are used for routing the microphone or DVA messages. The key that opens the microphone door operates a microswitch to enable / disable controls. When the door is open the controls on the unit are enabled and with the door closed the controls are disabled to protect against unauthorised operation.

Additional audio and control inputs enable additional 'slave' control nodes to be supported or additional emergency microphones, paging microphones or background music sources.

The unit has the following Audio I/O:
☐ Audio inputs: 5 inputs, four of which can support multi-zone Paging or Emergency Microphones plus an additional input for miscellaneous functions such as background music.
☐ Audio outputs: 3 Network Audio outputs (+20dBu)
☐ Digital messages:
   DVA1 & DVA2 - 66 second messages
   DVA3 & DVA4 - 50 second messages.

The built in Network Interface Unit delivers the 3 channels of audio plus data. The network operates as a fault tolerant loop.

Up to 8 Distributed Amplifier Units are allowed per device loop and up to 30 DAUs per system. These are controlled automatically by the fire system with manual control from Audio Control Units.

Interfaces are built in including: 12 off opto-isolated circuits, two serial interfaces (RS232/485) and common fault relay.

The unit includes a built in, fully monitored, temperature compensated charger and battery pack suitable for 24 hours quiescent and 0.5 hours alarm operation. The built in battery pack will not be adequate for all configurations, for example when 3 Slave ACUs are connected with 60 buttons, for such configuration consult supplier for guidnace.
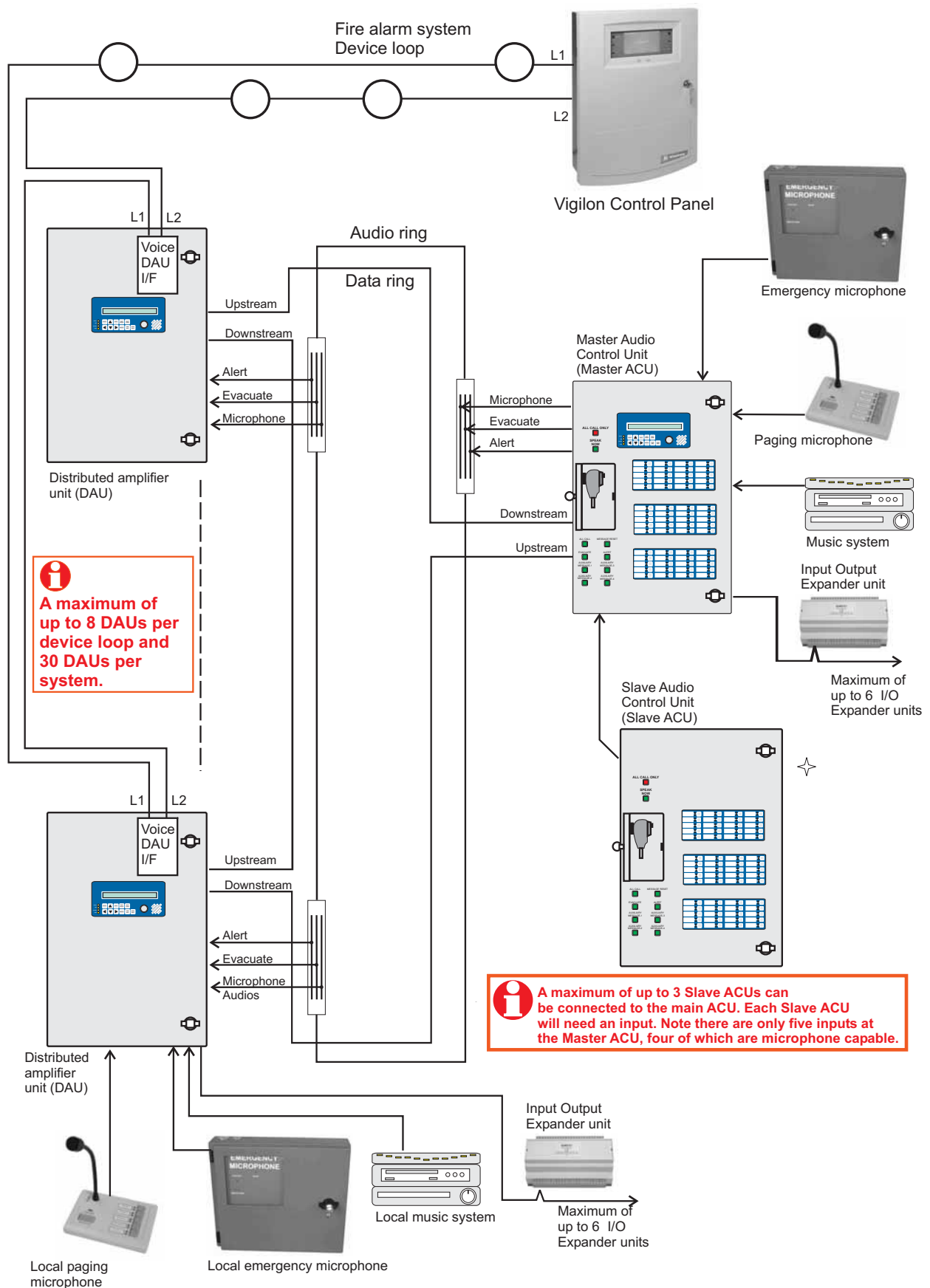
Technical data

General

AC Supply Voltage	230V +10 , -6% rms 50Hz AC
Maximum AC Power Consumption (100V 1kHz sinewave into rated resistive loads)	2A at 230V AC 600VA
AC Supply Fuse Rating (internal)	T5 A H (use fuses to IEC 60127)
DC Supply Voltage	21 to 27.6V (from nominal 24V lead acid battery)
Battery Capacity and type for 24h standby +0.5h alarm back-up	2 - 18 Ah SLA. Yuasa NPL18-12
DC Supply Fuse Rating	T25A
Dimensions (H x W x D)	700mm x 510mm x 160mm
Weight	23kg less batteries 12kg weight of batteries 35kg total weight
Temperature Range (storage and operating)	-5°C to +50°C
Humidity Range	0% to 93% Non Condensing

Audio

Audio Input		
Sensitivity and Impedance:	Input 1 to 4	-20dBu (77mV) @ Z ≥ 10kW
	Input 5	Suits 1-2V rms units Z ≥ 5kW
Input Overload Margin		40dB
Input Attenuator Range		0-64dB
Equalisation	F Cut	-12dB/Oct HPF at 200Hz
	Bass	±12dB 100Hz shelving
	Mid	±12dB 2.5kHz
	Treble	±12dB 10kHz shelving
Input Surveillance Tone		20-30Hz Required Level 0 to –40dBFS
Audio Output		
Equalisation	Graphic Equaliser	±12dB at 125, 250, 500, 1k, 2k, 8k, 16k Hz
Surveillance Tone		10dBu to -30dBu 30Hz Continuous
Audio General		
THD Input to Output		<0.1% @1kHz
Crosstalk		>70dB @1kHz
Residual Noise		<78dBu (A)
S/N Line		>70dB (A)
Frequency Response (Input to Output)		100Hz-20kHz –3dB
DVA Bandwidth		100Hz to 8kHz
General		
Audio Monitoring: SPL from loudspeaker (sounder mode) Frequency Response (from input through to speaker) Gain Control Range		≥ 50dBA @ 1m from equipment enclosure 200Hz - 10kHz (-3dB) 0dB to –64dB
Maximum external fault active-low input voltage threshold		2.5V
Maximum global-fault relay contact current rating		500mA
Open Collector drive (SPEAK NOW LED, ALL CALL LED)		100mA
Analogue Contact Thresholds		
Status		Voltage Range
Faulty: Open Circuit		>3.7
Healthy: Inactive		2.5 - 3.7
Indeterminate		0.8 - 2.5
Healthy: Active		0.3 - 0.8
Faulty: Short Circuit		< 0.3

System architecture

Fire alarm system
Device loop

L1

L2

Vigilon Control Panel

Emergency microphone

L1 L2

Voice
DAU
I/F

Audio ring

Data ring

Upstream

Downstream

Alert

Evacuate

Microphone

Distributed amplifier
unit (DAU)

**A maximum of
up to 8 DAUs per
device loop and
30 DAUs per
system.**

Master Audio
Control Unit
(Master ACU)

Microphone

Evacuate

Alert

ALL CALL ONLY

SPEAK
NOW

Paging microphone

Music system

Downstream

Upstream

Input Output
Expander unit

Maximum of
up to 6 I/O
Expander units

Slave Audio
Control Unit
(Slave ACU)

ALL CALL ONLY

SPEAK
NOW

L1 L2

Voice
DAU
I/F

Upstream

Downstream

Alert

Evacuate

Microphone

Audios

Distributed
amplifier
unit (DAU)

**A maximum of up to 3 Slave ACUs can
be connected to the main ACU. Each Slave ACU
will need an input. Note there are only five inputs at
the Master ACU, four of which are microphone capable.**

Input Output
Expander unit

Local paging
microphone

Local emergency microphone

Local music system

Maximum
of up to 6 I/O
Expander units

System overview

The system enables a number of Vigilon Voice distributed amplifier units to be controlled by a Master Audio Control Unit and a Fire alarm system.

The primary function of the Master Audio Control Unit is to act as a Master Emergency Microphone. DVA messages such as Evacuate, Alert and Auxiliary messages may also be initiated from the Audio Control Unit.

The Master Audio Control Unit allows a number of "slave" microphones to be supported using Slave Control Units (Slave ACUs).

Each Vigilon Voice Distributed amplifier unit (DAU) may interface directly to a Vigilon fire alarm system using the DAU interface.

DVA messages may be played locally at each Vigilon Voice DAU, or played over the network fully synchronised. The local messages may be configured to act as a back up should the centrally originated DVA fail or be unavailable.

The Master Audio Control Unit and DAUs are interconnected by a data ring for control and by an audio ring for the distribution of microphone and DVA audio.

The three audio channels allow for concurrent broadcast of ALERT, EVACUATE and EMERGENCY MICROPHONE audio.

The DAUs are also connected to the device loop of the fire system for automatic control of ALERT and EVACUATE audio.

The audio and data rings plus the device loop are tolerant to open and short circuit faults and operate over MICC and other fire rated cables.

System parametric limits

Products	Maximum
Distributed Amplifier units	Up to 8 per device loop and 30 per system
'slave ACU' Audio Control Units that can be added to a 'master ACU' Audio Control Unit	Up to 3
Distance between nodes (data transmission)	1km Total audio network cable usage must not exceed 3km

Cables

Mains Supply cable

The mains supply cable must be a standard fire resisting type and should meet PH30 classification.

Cables for Audio and Data ring

The fire rated cable for wiring the audio and data rings must have:

☐ 5 pair twisted (minimum 4 pair twisted)

☐ $0.5mm^2$ conductor size with overall screen

Standard (non enhanced) cable to BS8434-Part 1:

☐ Fireshield cable systems limited FSDATA/0.5/05P/RD   or

☐ FS 00/0.5/05P/RD

Enhanced cable recommended to BS8434-Part 2:

☐ FS DATA/001/05P/RD

Cables for Vigilon Device Loop

For information on recommended cables for wiring the vigilon device loop, see the installation manual supplied with the Vigilon control panel.

Safety and Precautions

Environmental precautions
The temperature and humidity ranges shown in the specifications for this product must not be exceeded. This equipment must not be installed in an area that is subject to a corrosive atmosphere, excessive moisture or may allow water or other liquids to come into contact with the unit or its external connections. In the close proximity of some radio frequency transmitters, the signal to noise ratio of this product may be reduced. If this occurs, re-locate the equipment or install signal cables to one that is recommended.

ESD Precautions
This product contains static-sensitive devices. Observe ESD precautions when working on the equipment with the cover removed or making connections to the Field Terminals.

Electric shock safety
Always ensure that the equipment is correctly earthed by connection to an AC mains supply with a protective earth connection.

This product contains wiring that is energised to 230V rms AC mains and 100V rms audio signals at up to 20kHz. Terminals marked with the ⚡ symbol are hazardous and the external wiring connected to these terminals requires installation by an instructed person. Always replace blown fuses with the correct type and rating (see Product Specifications).

⚠️ **This equipment is intended for continuous operation and as such does not contain an external mains switch. It is considered as a system which is permanently connected to the mains. An all-pole mains switch with a separation of 3mm in each pole shall be incorporated in the electrical supply spur feeding the unit.**

Internal Mains and Battery isolator switches are included for service purposes.

If the inner electronic module's cover is removed then hazardous voltages are still accessible even if the internal Mains Isolator switch is OFF.

Fire / Burn safety

⚠️ **The 24V DC batteries connected within this unit can deliver very high currents that could cause fire or burns. Take care to avoid short-circuits of the battery supply by tools or jewellery. Always replace blown fuses with the correct type and rating (see Product Specifications).**

Weight safety
This equipment is very heavy. Please lift and handle with care to avoid strain or impact injuries, and follow the recommended installation procedure. Install the electronic module and batteries after mounting the back-box and chassis to the wall.

⚠️ **To prevent injury, this apparatus must be securely attached to the wall in accordance with the installation instruction.**

You must switch-off AC mains and Battery supplies before plugging/unplugging amplifiers and interface cards or you may damage the electronics.

When powering up the unit, turn on the mains switch before turning on the battery switch.

Ensure adequately rated cables are used for power supply and loudspeaker connections, and route input cables away from power and loudspeaker cables.

⚠️ **LITHIUM BATTERY**
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type. Dispose of battery carefully to avoid environmental damage. Do not dispose of battery in a fire.

Abbreviations

ACU   - Audio Control Unit
ANS   - Ambient Noise Sensor
BMB   - Breakout Multi Box
DAU   - Distributed Amplifier Unit
DSP   - Digital Signal Processing
DVA   - Digital Voice Announcers
NIU   - Network Interface Unit
DMS   - Desk Microphone Station
FMS   - Fireman's Microphone Station

Installation

What you will need

- ☐ Audio Control Unit Back Box complete with Electronics Module and front door assembly
- ☐ Batteries and leads
- ☐ Electric Drill
- ☐ Wall Fixings
- ☐ Cable Glands
- ☐ A small Flat-bladed Screwdriver
- ☐ Large Pozidrive Screwdriver
- ☐ 8mm Socket Spanner
- ☐ Cable Termination Tools -cutters/strippers etc. to suit cable type
- ☐ 8mm Insulated spanner for battery terminals

Recommended Installation Procedure

The chassis with the electronics module must be removed from the back-box to gain access to all four mounting holes on the back-box.
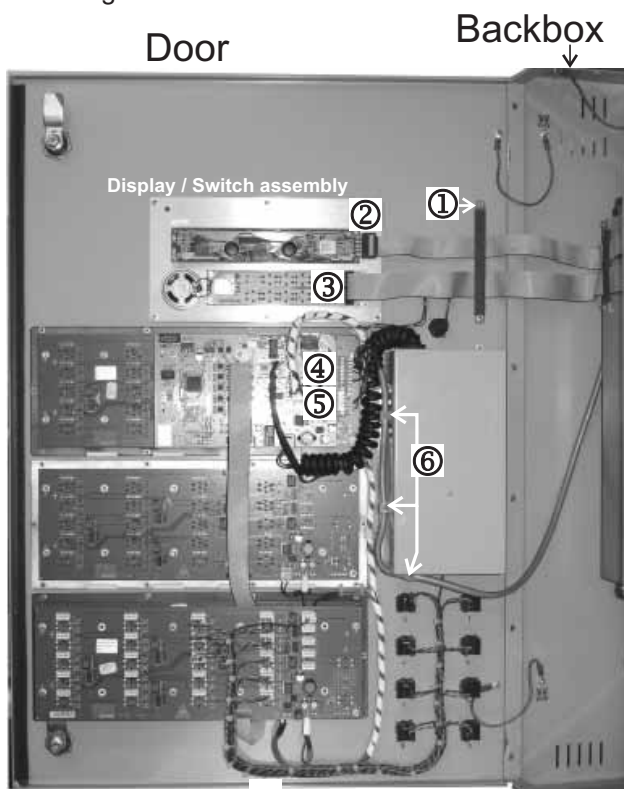
a. Remove one side of the cable clamp at position ①.
b. Disconnect IDC connectors from the Display/Switch assembly at positions ② and ③.
c. Remove microphone connectors P50 and P51 at positions ④ and ⑤.
d. Remove the cable securing nuts at positions ⑥.
e. Disconnect the earth lead between the electronics module and backbox at position ⑧.
f. Remove the cable fastener ⑦ to gain access to chassis fixing nut ⑨.

⚠ **Care must be taken when removing the Chassis with the Electronic module intact from the back-box. This is because the module is only hooked onto the Chassis.**
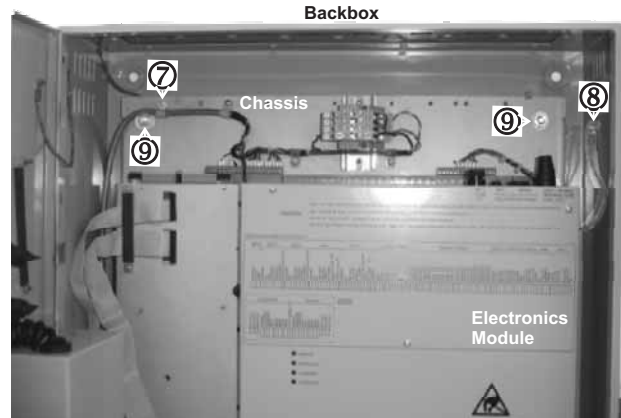
g. Remove the top left nut ⑨ and remove the transit bracket if fitted and then refit the nut. Remove the top right nut ⑨ and remove the transit bracket if fitted.
h. Remove the remaining three securing nuts ⑨, and then carefully remove the chassis with the electronic module from the back-box.
i. Store the Chassis with the electronic module in a safe place to avoid damage or dust ingress during the installation procedure.
j. Remove the gland-plate from the back-box by undoing the securing screws.
k. Secure the back-box to the wall.

⚠ **The wall and fixings must be capable of safely bearing the weight of the equipment - 35kg. Ensure that the wall is made of a suitable material (not stud walls for example) and that adequately rated fixings are used.**

l. Fit all glands to the gland plate.

⚠ **Take care when fitting the chassis with the electronic module to the back-box.**

m. Refit the chassis with electronic module assembly to the back-box.
n. Cables may be glanded, dressed and cut to approximately the correct length. The top edge of the chassis has provision for earthing bars for terminating the incoming cable drain wires.
o. Reconnect the cables and refit the cable securing clips and straps previously removed.
p. Ensure that the mains and battery isolator switches are in the off position.
q. Ensure that the mains supply to the unit is isolated.
r. Remove the top cover of the electronic module to gain access to the mains input terminals.
s. Connect all field cabling to the appropriate terminal blocks.

Terminals for wiring

RS232
- GND
- RS232 CTS
- RS232 RTS
- +V
- RS232 RX
- RS232 TX
- SCREEN

RS485
- SCREEN
- RS485DXP
- RS485DXN
- GND
- SCREEN

ANALOGUE CONTROL FAULT RELAY
- RELAY COM
- RELAY NC
- RELAY NO
- SUPPLY+
- AGND
- ANLG IN8
- ANLG IN7
- ANLG IN6
- ANLG IN5
- ANLG IN4
- ANLG IN3
- ANLG IN2
- ANLG IN1
- SCREEN

PARALLEL CONTROL
- CONTACT12-
- CONTACT12+
- CONTACT11-
- CONTACT11+
- CONTACT10-
- CONTACT10+
- CONTACT9-
- CONTACT9+
- CONTACT8-
- CONTACT8+
- CONTACT7-
- CONTACT7+
- CONTACT6-
- CONTACT6+
- CONTACT5-
- CONTACT5+
- CONTACT4-
- CONTACT4+
- CONTACT3-
- CONTACT3+
- CONTACT2-
- CONTACT2+
- CONTACT1-
- CONTACT1+

OUTPUT EXPAND
- SLEEP DXP
- SLEEP DXN
- AUDIO MON-
- AUDIO MON+
- CANL
- CANH
- OUT4-
- OUT4+
- OUT3-
- OUT3+
- OUT2-
- OUT2+
- OUT1-
- OUT1+
- SCREEN

INPUT 1
- SPEAK NOW- LED1
- PTT1
- ALL CALL-ONLY-LED1
- 0V SUPPLY
- SUPPLY+
- MIC DXN
- MIC DXP
- IN-
- IN+
- SCREEN

INPUT 2
- SPEAK NOW- LED2
- PTT2
- ALL CALL-ONLY-LED2
- 0V SUPPLY
- SUPPLY+
- MIC DXN
- MIC DXP
- IN-
- IN+
- SCREEN

INPUT 3
- POWER NON-BACKED
- 0V SUPPLY
- SUPPLY+
- MIC DXN
- MIC DXP
- IN-
- IN+
- SCREEN

INPUT 4
- POWER NON-BACKED
- 0V SUPPLY
- SUPPLY+
- MIC DXN
- MIC DXP
- IN-
- IN+
- SCREEN

INPUT 5
- SCREEN
- AUDIO
- GND

UPSTREAM
- BUS3-FAULT
- BUS2-FAULT
- BUS1-FAULT
- BUS3-
- BUS3+
- BUS2-
- BUS2+
- BUS1-
- BUS1+
- DXN-RS485
- DXP-RS485
- ISO-GND
- ACTIVITY (DOWN / UP)

DOWNSTREAM
- BUS3-
- BUS3+
- BUS2-
- BUS2+
- BUS1-
- BUS1+
- DXN-RS485
- DXP-RS485
- SCREEN
- BUS3-FAULT
- BUS2-FAULT
- BUS1-FAULT

Input 1 and 2 on DIN rail

A DIN rail that provides the connections for the data on inputs 1 and 2 and PTT for when an external console is used instead of a 'door' microphone.

DIN RAIL

- INPUT 2 - DXN
- DXP
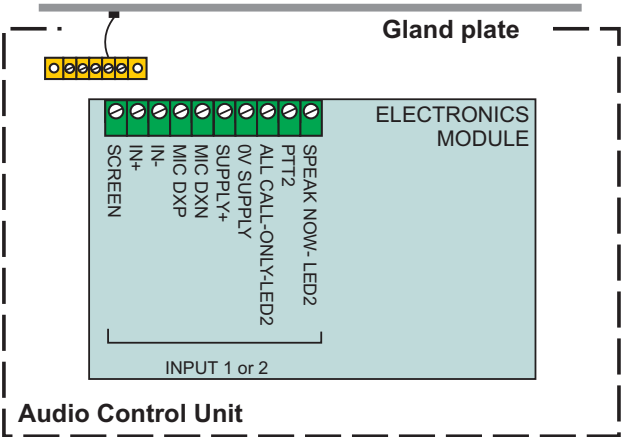- INPUT DXN
- DXP
- *INPUT 1 - PTT+
- *INPUT 1 - PTT-
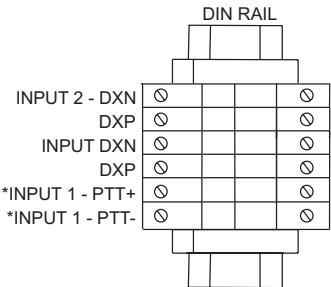
* - Only fitted on control units using external consoles, i.e. with no door-mounted microphone

Inputs 1 or 2

The inputs 1-2 are software configurable inputs with a hardware failsafe mode (for input 1 only) for emergency operation in the event of processor failure (BS5839 requirement).
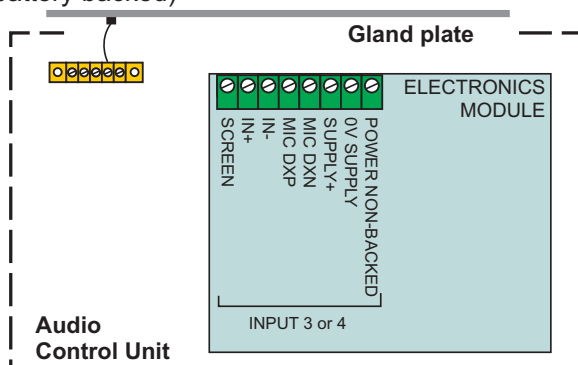
Signal	Characteristic
Screen	Connection for cable screen
In+	Balanced Audio Input. Level: 0dBu. Input impedance: 10k Ohms
In-	As above.
Mic DXP	EIA RS485 19200 baud
Mic DXN	As above
+V Supply	+V supply (18-36V)
0V supply	0V supply
ALL CALL-ONLY	
LED-1(2)	Open collector drive. 100mA max.
PTT+	Press to talk switch input (internal pulled up to +5V by 4k7 Ohms)
SPEAK NOW	
LED-1(2)	Open collector drive.100mA max.

Gland plate

ELECTRONICS MODULE

- SCREEN
- IN+
- IN-
- MIC DXP
- MIC DXN
- SUPPLY+
- 0V SUPPLY
- ALL CALL-ONLY-LED2
- PTT2
- SPEAK NOW- LED2

INPUT 1 or 2

Audio Control Unit

Inputs 3 or 4

The inputs 3 and 4 are electronically balanced universal inputs to accept line level signals.
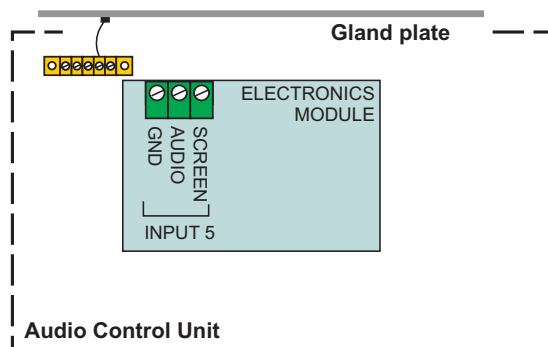
Signal	Characteristic
Screen	Connection for cable screen
In+	Balanced Audio Input. Level: 0dBu. Input impedance: 10K Ohms
In-	As above.
Mic DXP	EIA RS485 19200 baud
Mic DXN	As above
+V Supply	+V supply (12V)
0v supply	0V supply
Power Non-backed Auxiliary power supply (not battery backed)	

Input 5

This is a mono audio input for background music routing.

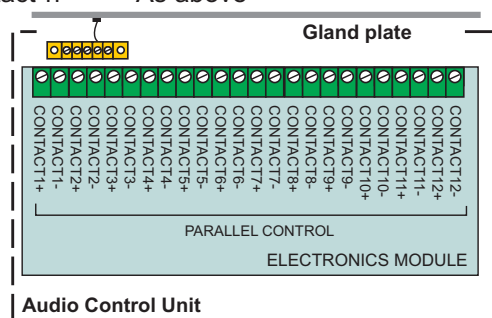| Signal	Characteristic
Screen	Connection for cable screen
Audio	Unbalanced Audio Input. Level: 0dBu.Input impedance: 5k Ohms suitable fo 1V-2V music source
GND-	As above.

Output Expand

The output expand terminals are not used.

Parallel Control

The contacts 1 to 12 are opto-isolated interface. The contacts is active when the opto-isolator is turned on.

Signal	Characteristic
Contact"n"+	Opto-isolated input + connection. Inbuilt resistor to suit voltages of +12V to +40V
Contact"n"-	As above

RS485

This is a serial control connection for interfacing with remote I/O units (product: BMB01) to be configured for expanding the Control Unit control capabilities.

Signal	Characteristic
GND	0V Reference
RS485DXP	EIA RS485 9600 Baud
RS485DXN	EIA RS485 9600 Baud
Screen	Connection for cable screen
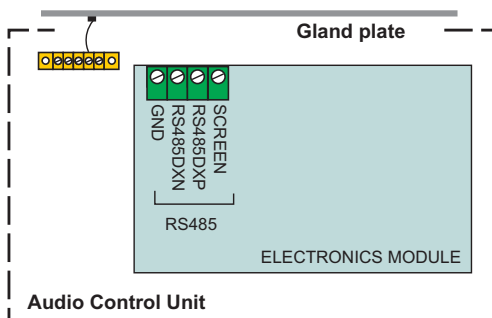
Slave Audio Control Unit (Slave ACU)

Up to 3 Slave Audio Control Units (Slave ACUs) can be connected to the main Master Audio Control Unit (Master ACU). The connection to input 2 is different to the connection to Inputs 3 and 4.

The Slave ACUs connected to Inputs 3 and 4 are different and do not have software switching sensitivity.

Repeater Slave Audio Control Unit (Repeat Slave ACU)

Power connection

The power supply from the Input 3 and 4 connector is only suitable for driving DMS type paging microphones, due to the higher current consumption of the secondary control units, these need to be feed from the 24V connections on inputs 1 and 2.
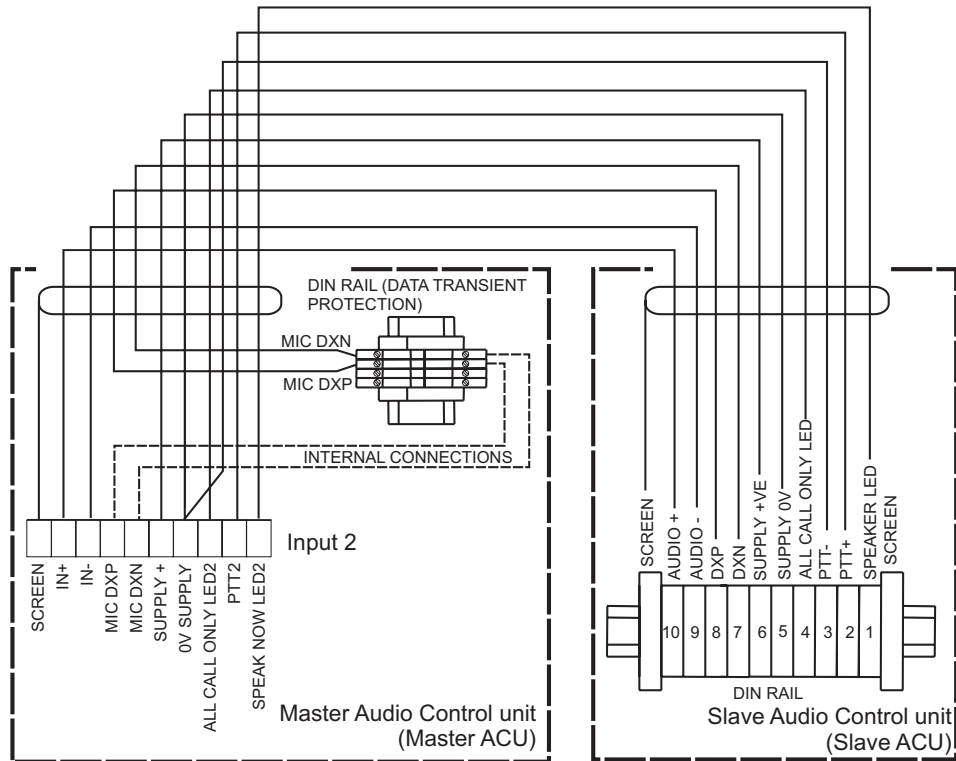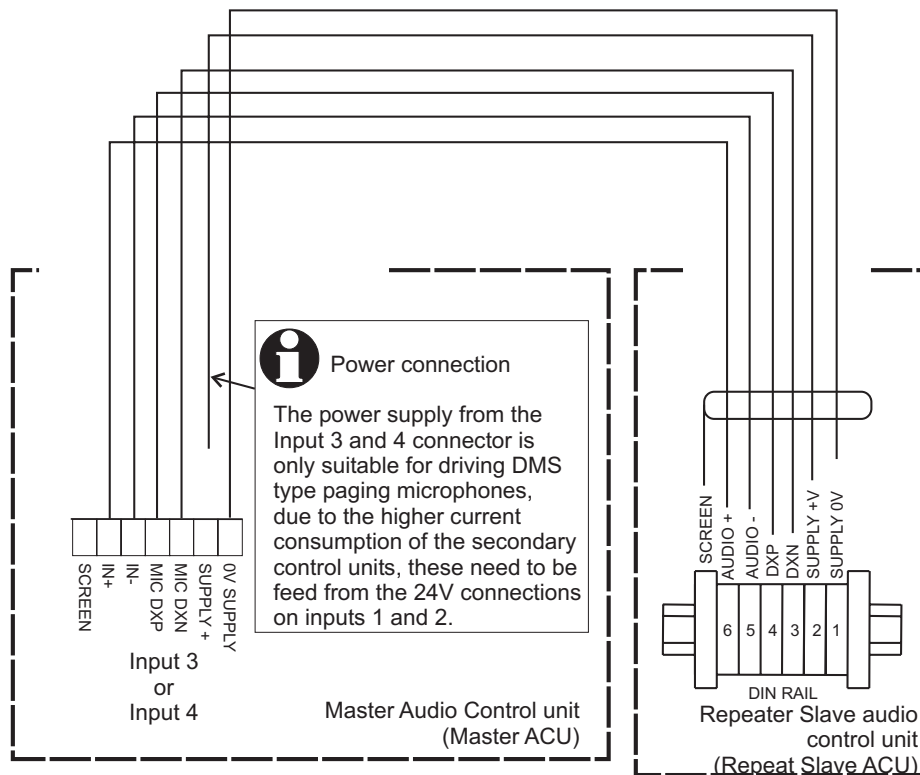
Background music at Master Audio Control Unit (Master ACU)

The Master Audio Control Unit (Master ACU) can have either one or two background inputs. The first Input connects to Input-2 (balanced input), while the second Input if used connects to Input-5 (unbalanced input), which requires a balancing transformer.

BACKGROUND MUSIC **SECOND** INPUT
(IF USED)

BACKGROUND MUSIC **FIRST** INPUT
(IF USED)

Mini-DIN Rail

BALANCING
TRANSFORMER

ORANGE

RED

BLACK

WHITE

YELLOW

BLUE
n/c

SCREEN

IN+

IN−

MIC DXP

MIC DXN

SUPPLY+

0V SUPPLY

ALL CALL-ONLY-LED2

PTT2

SPEAK NOW- LED2

SCREEN

AUDIO

GND
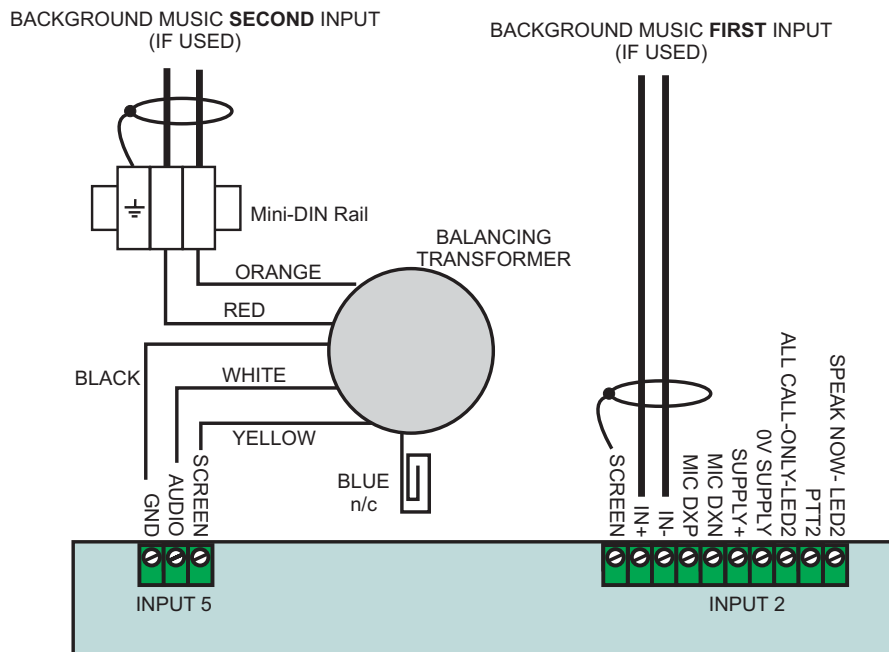
INPUT 5

INPUT 2

Analogue Control and Fault relay

The contacts ANLG IN1-8, only use a non-isolated analogue interface with an internal pull-up to 5V.

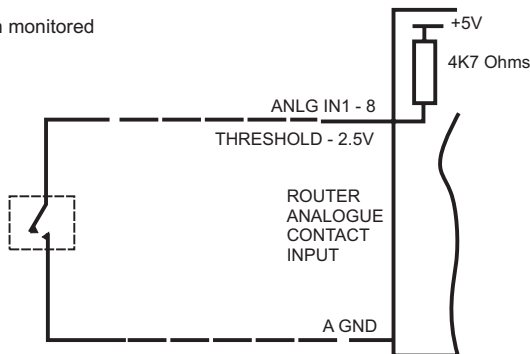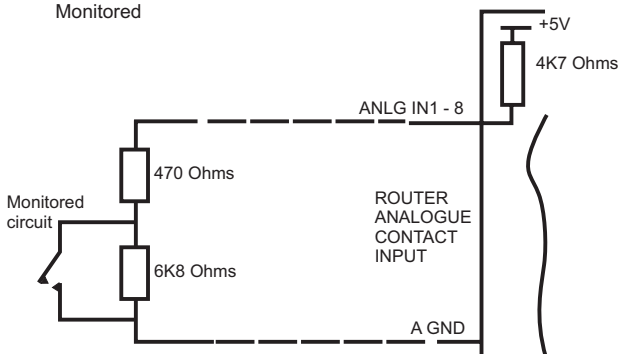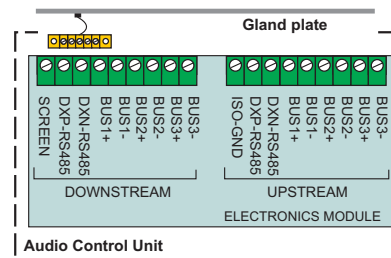| Signal	Characteristic
ANLG IN1-8	Control input (Internal pulled up to +5V by 4k7 Ohms)
A GND	Ground reference for inputs
Relay NO	Volt free contact - normally open
Relay NC	Volt free contact - normally closed
Relay COM	Relay common
Screen	Connection for cable screen
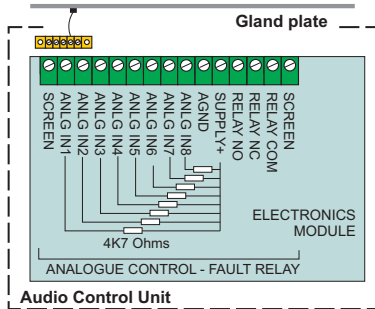
Non monitored

Monitored

RS232

Serial interface for connection of remote diagnostics and printer interface.

Signal	Characteristic
Screen	Connection for cable screen
RS232TX	EIA RS232 Transmit data (9600 Baud)
RS232RX	EIA RS232 Receive data (9600 Baud)
+V	+V supply (5V)
RS232RTS	EIA RS232 Request to send
RS232CTS	EIA RS232 Clear to send
GND	0V reference
Screen	Connection for cable screen
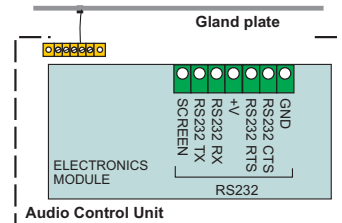
Audio and Data ring

Upstream and Downstream are network interface connections comprising RS485 controls and triplicated audio bus.

Upstream and Downstream are network interface connections comprising RS485 controls and a 3 channel audio bus.

Signal	Characteristic
Downstream	
GND-ISO	Connection for cable screen
RS485-DXP	EIA RS485 38400 bits per second
RS485-DXN	As above
BUS1+	Audio bus Loop 1 #
BUS1-	Audio bus Loop 1
BUS2+	Audio bus Loop 2 #
BUS2-	Audio bus Loop 2
BUS3+	Audio bus Loop 3 #
BUS3-	Audio bus Loop 3
# - (+20dBu Analogue audio)	
Upstream	
GND-ISO	Connection for cable screen
RS485-DXP	EIA RS485 38400 bits per second
RS485-DXN	As above
BUS1+	Audio bus Loop 1 #
BUS1-	Audio bus Loop 1
BUS2+	Audio bus Loop 2 #
BUS2-	Audio bus Loop 2
BUS3+	Audio bus Loop 3 #
BUS3-	Audio bus Loop 3

Data rings

The bi-directional RS 485 interface connects to each side of the ring. The RS 485 interfaces are electrically isolated on one side to avoid ground differential problems.

The data ring is fault tolerant and can isolate faulty part of the system. It usually operates in one preferred direction. However should a single fault be present the Audio Control Unit then communicates in both directions such that all units maintain communication.

Audio ring

The audio is distributed as base-band audio, one pair of copper wires per channel.

To maximise transmission distance and minimise interference and cross-talk effects, the audio is distributed at a high level from the Audio Control Unit and attenuated within each DAU.

Three audio channels can be supported to enable concurrent Alert, Evac and Emergency Microphone audio to be broadcast. In non-emergency conditions the audio channels may be used for music and paging functions.

The audio ring is fault-tolerant. This is achieved by relay isolation to isolate short circuits.

As well as distributing the audio the Emergency Microphone Press-to-talk signal is also conveyed over the audio link. This is to fulfil the BS 5839 requirement that an "All-Call Fireman's Microphone" operation is supported even if control processors or data networks fail.

DAU Outputs and IDs


```
UPSTREAM
DAU 4    16
         15
         14
         13
DOWNSTREAM

UPSTREAM
DAU 3    12
         11
         10
         9
DOWNSTREAM

UPSTREAM
DAU 2    8
         7
         6
         5
DOWNSTREAM

UPSTREAM
DAU 1    4
         3
         2
         1
DOWNSTREAM
```

```
UPSTREAM
DAU 7    28
         27
         26
         25
DOWNSTREAM

UPSTREAM
DAU 6    24
         23
         22
         21
DOWNSTREAM

UPSTREAM
DAU 5    20
         19
         18
         17
DOWNSTREAM
```

```
UPSTREAM
DAU 10   40
         39
         38
         37
DOWNSTREAM

UPSTREAM
DAU 9    36
         35
         34
         33
DOWNSTREAM

UPSTREAM
DAU 8    32
         31
         30
         29
DOWNSTREAM
```

```
UPSTREAM    DOWNSTREAM
```

AUDIO CONTROL UNIT

Each system node is equipped with a built in network interface, the network interface has two ports.

The ports are identified as UPSTREAM and DOWNSTREAM.

The Audio Control Unit normally 'talks' out of it's UPSTREAM port which is connected to DOWNSTREAM port of the first Vigilon Voice DAU in the chain. The UPSTEAM port of that Vigilon Voice DAU is then connected to the DOWNSTREAM port of the following system until a complete 'ring' is implemented back to the Audio Control Unit.

The first Vigilon Voice DAU is allocated a Unit-ID of 1, the next unit has Unit-ID 2 etc.

The outputs from the Vigilon Voice DAUs then become a contiguous sequence from the Control Node point of view.
Unit-ID#1 : outputs 1 to 4
Unit-ID#2 : outputs 5 to 6 Etc.

Device loop

Connection to the device loop of the fire system.

Voice DAU (2-way)

2 - way device

Earth to metal box

Note: The 0V terminals in the terminal plate are electrically connected together.

Manual call point

2 - way device

2 - way device

LOOP CIRCUIT 1

Voice DAU (2-way)

L1 0V	L2 0V	L1 0V	L2 0V	L1 0V	L2 0V	L1 0V	L2 0V

P2   LOOP 4   LOOP 3   LOOP 2   LOOP 1   P3

Terminal Card

PANEL

Data, Installation and Operation
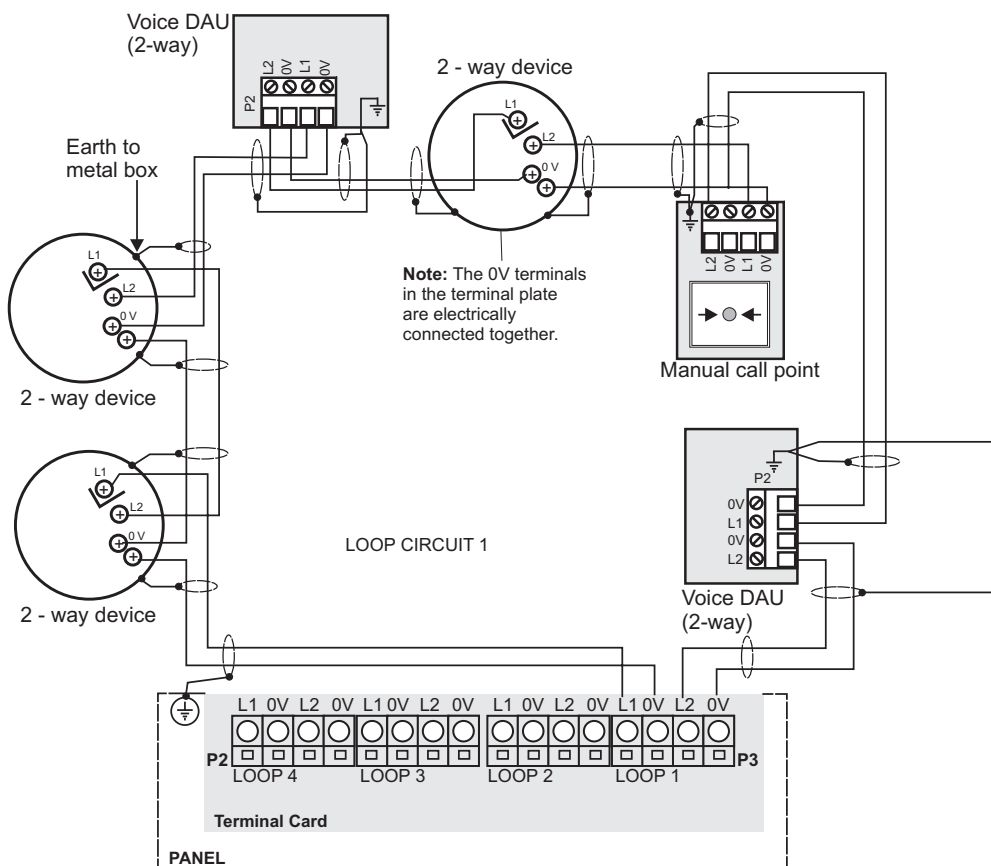
Battery

- ☐ Carefully lift the batteries into position.
- ☐ Connect the battery cables (positive, negative and interlink) noting correct polarity (Red=positive, Black=Negative).
- ☐ Fit the battery strap.

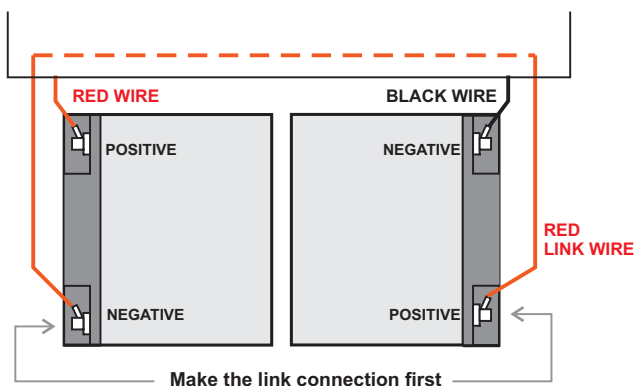⚠ **Make the battery connection to link the lower terminals first and ensure the orientation of the lugs are as shown in the diagram.**

RED WIRE   BLACK WIRE

POSITIVE   NEGATIVE

RED LINK WIRE

NEGATIVE   POSITIVE

Make the link connection first

- ☐ Re-fit the top cover.

You are now ready to begin commissioning the system. Refer to the Commissioning instructions.
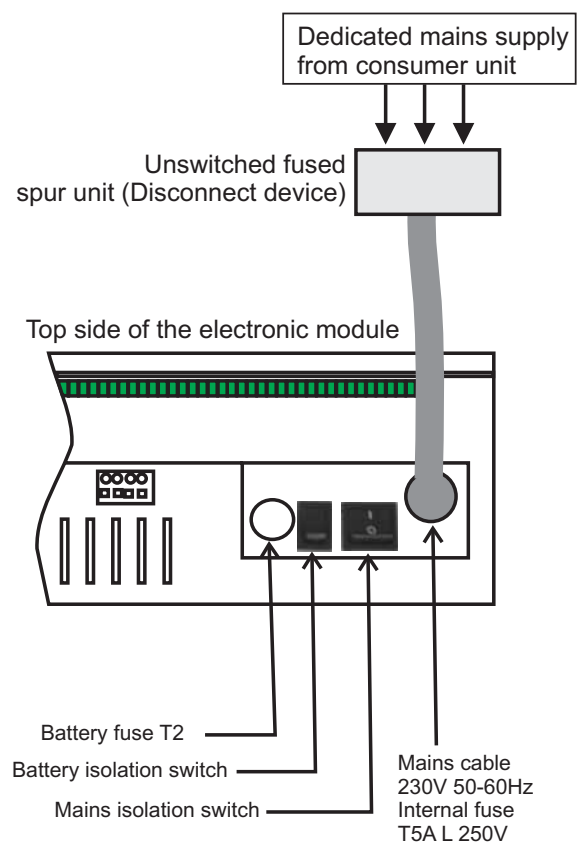
Mains

⚠ **Ensure that the mains supply cable enters the panel through a dedicated cable entry, located adjacent to the mains terminal block and also segregated from loop wiring.**

ⓘ **These fire alarm system products are not designed to be powered from IT Power systems.**

Mains supply to any fire alarm control and indicating equipment must be via an **unswitched fused spur** unit (Disconnect device).

Dedicated mains supply from consumer unit

Unswitched fused spur unit (Disconnect device)

Top side of the electronic module

Battery fuse T2

Battery isolation switch

Mains isolation switch

Mains cable 230V 50-60Hz Internal fuse T5A L 250V

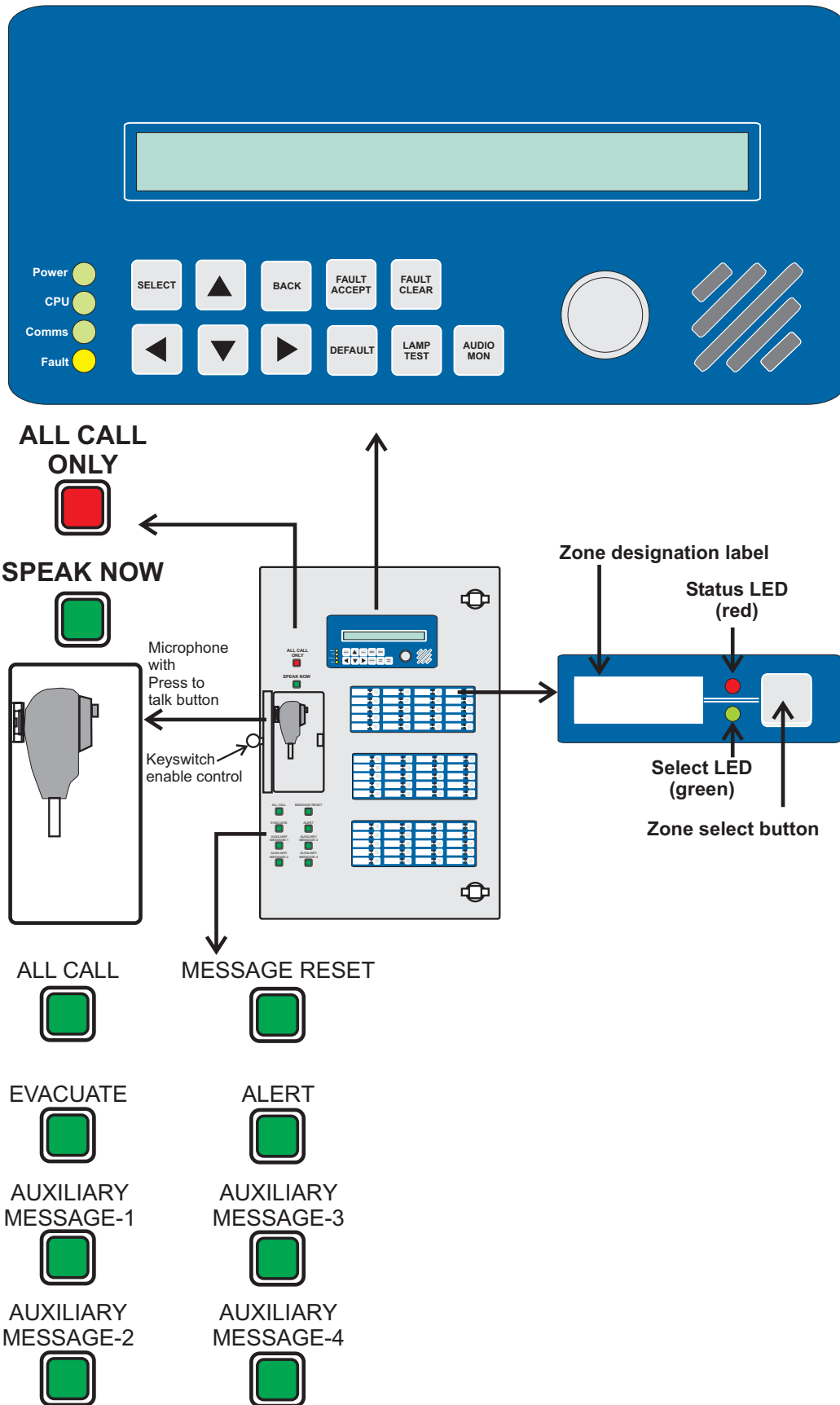The fused spur isolator cover should be marked:
FIRE ALARM - DO NOT SWITCH OFF
The fire alarm equipment's fused spur unit must be fed from a dedicated switch or protective device at the local mains supply distribution board.

⚠ **This equipment must be earthed.**
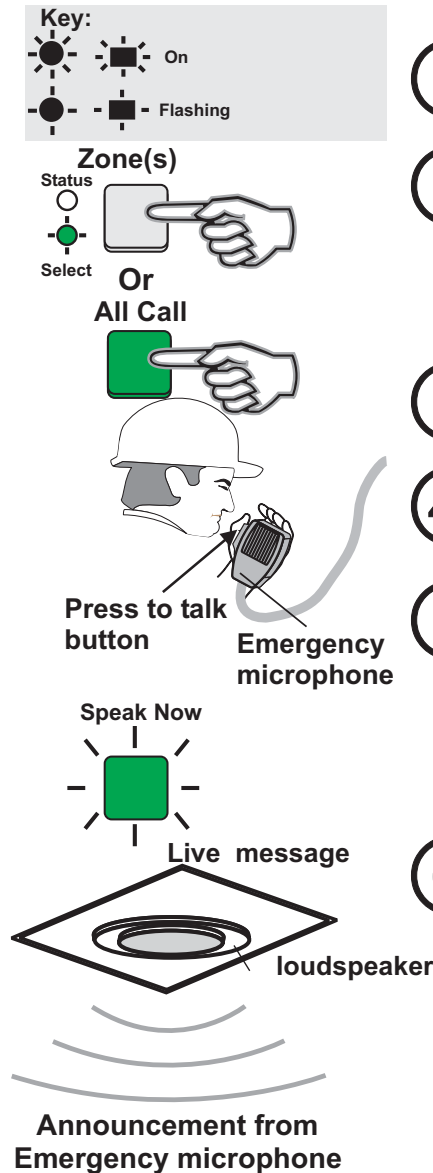
Control buttons

Control/Indicator	Description
Microphone door microswitch ENABLE CONTROLS	A microswitch when operated will enable emergency controls.
ZONE SWITCH	Press the button to pre-select the associated zone for a Microphone announcement, or to play messages. A subsequent press cancels the selection. The button can also be programmed to automatically initiate playback of EVACUATE, ALERT, AUXILIARY 1 / 2 MESSAGE to preset zones on a single press. A subsequent press cancels the selection.
SELECT LED	This LED will flash green when the zone select switch has been pressed. It goes steady when the route has been granted or the associated zone is otherwise 'busied'
STATUS LED	The status LED illuminates red to indicate the fire message status of the zone. It illuminates steadily for 'Evac' and flashes for 'Alert'. It illuminates in this fashion irrespective of whether the DVA messages have been originated by the Audio Control Unit or by the Fire Alarm system.
PTT SWITCH	Once a zone (or zones) is selected, pressing the PTT causes the chime (if selected) to be broadcast and the routes to be made.
SPEAK NOW LED	This LED illuminates once routes are made and the Chime (if selected) has finished sounding. The operator may then speak. It extinguishes as soon as the PTT is released.
DVA buttons: EVACUATE, ALERT, AUXILIARY 1 / 2 / 3 / 4 and CANCEL MESSAGES BUTTONS	Once a zone (or zones) is selected, pressing a EVACUATE, ALERT, AUXILIARY 1 / 2 / 3 / 4 button causes the messages to be routed to the selected zone. Selecting the zones and pressing the button again cancels the selection. The MESSAGES RESET will cancel all messages to all zones. It is possible to cancel messages to selective zones by first pressing the zone(s) button before pressing MESSAGE RESET.
ALL CALL ONLY	Illuminates if a processor or network fault renders selective paging inoperative.

> **The first button panel maps as buttons 1-20, the second 21-40 the third 41-60.**
> **The DVA buttons map as ALL-CALL:61 MESSAGE RESET:62 EVAC:63 ALERT-64 AUX-1-65 AUX-2-66 AUX-3 67 AUX-4 68**
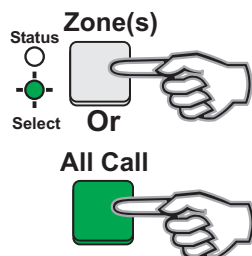
How to use the Emergency microphone

Key:

On

Flashing

Zone(s)

Status

Select

**Or
All Call**

Press to talk button

Emergency microphone

Speak Now

Live message
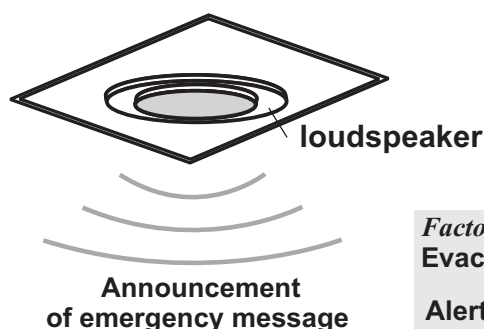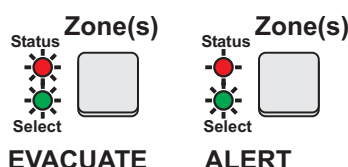
loudspeaker

Announcement from Emergency microphone

① Open the microphone door for access to the microphone and to enable controls.

② Select the *Zone(s)* in which live announcements are to be made. To do this press the required *Zone* button(s) and note the green Select LED(s) flash. If you need to deselect a selected zone then press the button again.
To select all zones press the *All Call* button and note the green Select LEDs next to the Zone buttons are all flashing.

③ Remove the Emergency microphone from the holder by sliding it up and out and hold it in the palm of your hand.

④ Press the *Press to Talk* button on the microphone.
An attention tone is signaled in the selected *Zone(s)* and the *Speak Now* LED is lit.

⑤ While pressing the *Press to Talk* button, speak into the microphone to make the live announcement.

> While speaking into the microphone should the output sound distorted then move the microphone a little further away from the mouth while speaking.

⑥ When finished release the *Press to Talk* button and return the microphone to the holder in the panel, ensuring the coiled wire is tucked inside the recess. Close the microphone door and lock it, this will also disable controls.

How to announce Evacuate or Alert message

Key:

On

Flashing

Zone(s)

Status

Select **Or**

All Call

EVACUATE / ALERT

Status **Zone(s)**   Status **Zone(s)**

Select   Select

EVACUATE   **ALERT**

loudspeaker

Announcement of emergency message

To stop auxiliary message:

IN SELECTIVE   **IN ALL ZONES**
Zone(s)   **Message Reset**

Message Reset

① Open the microphone door to enable controls.

② Select the *Zone(s)* in which announcements are to be made. To do this press the required *Zone* button(s) and note the *Select* green LED(s) flash.
If you need to deselect a selected zone then press the button again. To select all zones press the *All Call* button and note that all *green select LEDs next to the zone buttons are* flashing.

③ Press the required *Emergency message* button:
EVACUATE or ALERT

Note that the LEDs of the selected *Zone* button(s) are lit giving either flashing or steady indication depending on the message selected.

The system will sound an attention tone followed by the selected emergency message, this sequence will be repeated until the message is reset.

Factory default:
Evacuate message follows an attention tone.

Alert message follows an attention tone

④ To stop announcement to all zones press the 'Message Reset' button. The announcement will either play out or stop immediately dependent on how your system is configured.

How to announce Auxiliary message

Key:

On

Flashing

① Open the microphone door to enable controls.

Status **Zone(s)**

Select **Or**

All Call

② Select the *Zone(s)* in which announcements are to be made. To do this press the required *Zone* button(s) and note the *Select* LED(s) flash.
If you need to deselect a selected zone then press the button again. To select all zones press the *All Call* button and note all the green *Select* LEDs next to the *Zone* buttons are flashing.
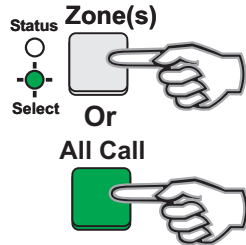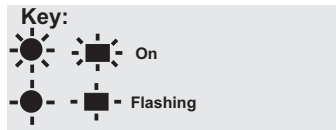
Auxiliary Message n

③ Press the required *Auxiliary message* button:
Auxiliary Message 1
Auxiliary Message 2
Auxiliary Message 3
Auxiliary Message 4

Status **Zone(s)**

Select

Factory default:
Standard Auxiliary 1 message follows an attention tone.

Auxiliary 2 message follows an attention tone.

Auxiliary 3 message follows an attention tone.

Auxiliary 4 message follows an attention tone.
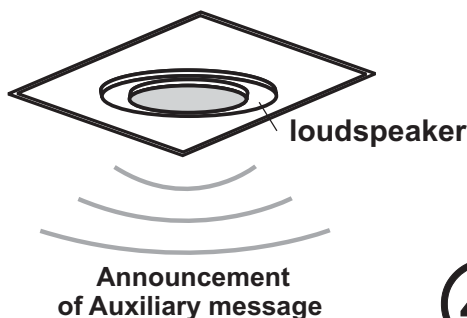
loudspeaker

**Announcement
of Auxiliary message**

④ To stop announcement to all zones press the 'Message Reset' button. The announcement will either play out or stop immediately dependent on how your system is configured.

To stop auxiliary message:

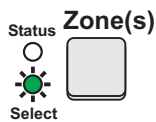**IN SELECTIVE**   **IN ALL ZONES**
Zone(s)   **Message Reset**

Message Reset

Programming and Fault indication user interface

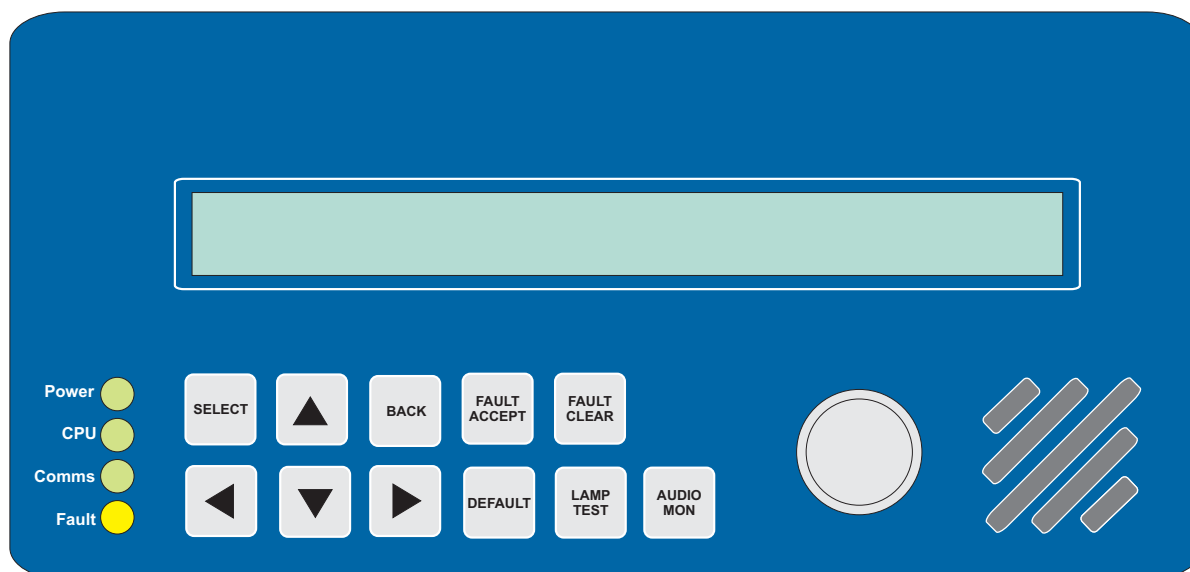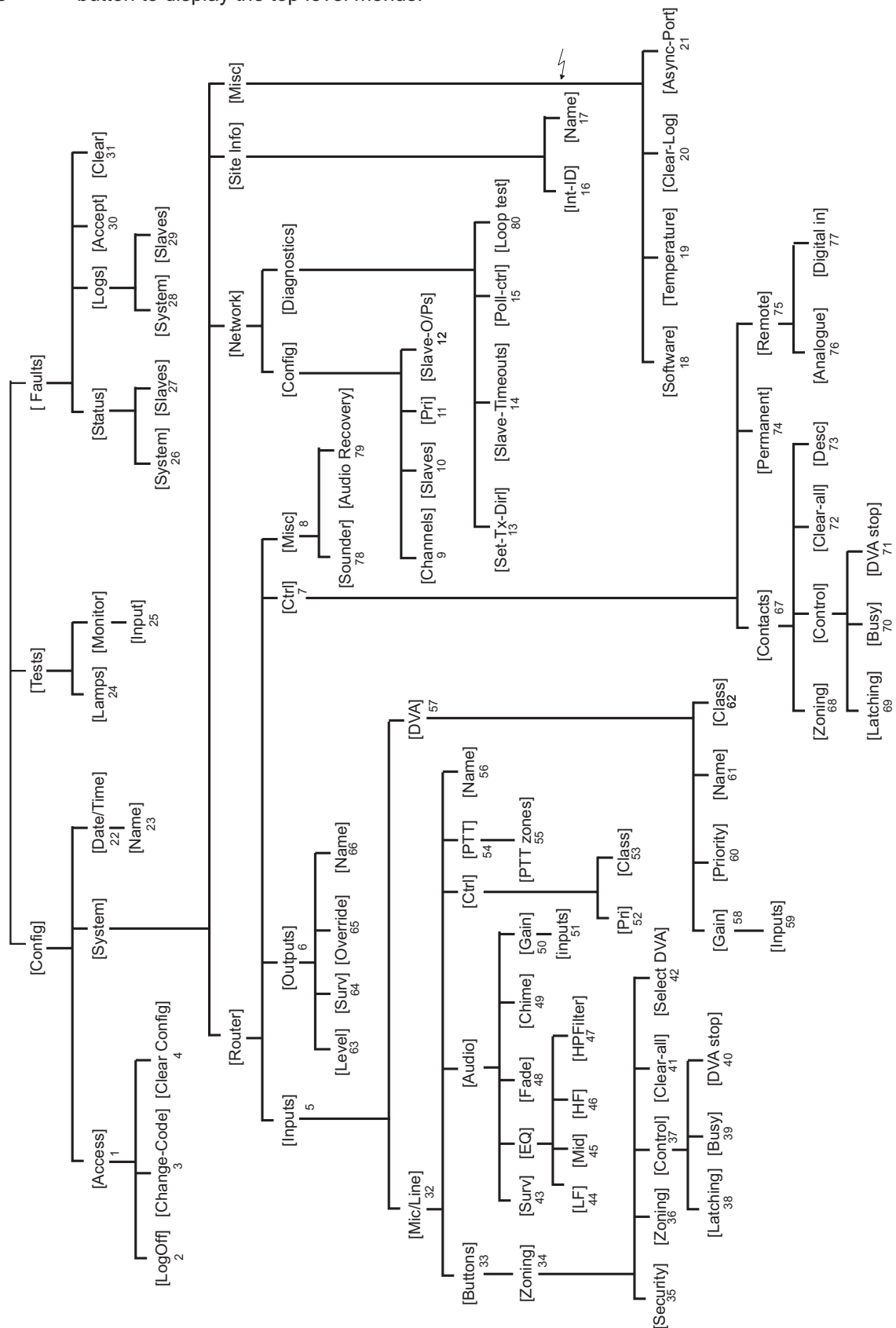|	
<,>	Left and right arrow keys move in the direction selected to the next item in the menu. The selected item is indicated by [brackets] around the selection.
^,v	Up and down arrows will toggle a selection or increment a number or letter of the alphabet when editing. The rotary encoder also acts in the same manner as these keys for faster editing.
Select key	Press after selecting an item to confirm the selection.
Back Key	Press after selecting an item to cancel the selection. If pressed repeatedly will return to the Top Level Menu
Default Key	Press to clear previously configured text strings quickly during system configuration.
Fault Accept Key	Accepts all current faults, steadies the flashing fault LED indication and turns off the audible alarm until a new fault condition occurs.
Fault Clear Key	Clears all faults. All equipment is set to the 'no faults' state. If there are any faults present they are detected anew and reported again. Also cancels any Amplifier Changeovers in effect.
Audio Mon Key	Selects Audio Monitor sub-menu on LCD.
Lamp Test Key	Tests interface to all amplifier equipment. The fault and select LEDs for each amplifier and all LEDs on mainframes will be turned on and the audible alarm will sound for 3 seconds. The menu locks during this time. This function is also available from the "Tests" menu.
Rotary Encoder	Multi function: For fast increment and decrement of menu items (faster than using ^ and v arrow keys). In the Top Level menu it adjusts LCD contrast. During Audio Monitoring it acts as a Volume Control.
Loudspeaker	Dual function: Alarm sounder and Audio Monitor
LCD Display	2 x 40 backlit alphanumeric display used to display menu and configuration data.
Power LED (green)	Lit only if the unit is receiving DC Power from both mains and battery.
CPU LED (green)	Flashes to show processor is healthy
Comms LED (green)	Indicates communication activity between mains processor and amplifier unit.
Fault LED (amber)	Indicates the unit has detected system fault

Audio Control Unit menu map of functions

Press the **SELECT** button to display the top level menus.

Menu map of Vigilon Voice - Control Unit

[Config]

[Access] 1
[LogOff] 2
[Change-Code] 3
[Clear Config] 4

[System]
[Date/Time] 22
[Name] 23

[Tests]
[Lamps] 24
[Monitor] 25
[Input] 25

[Faults]
[Status]
[System] 26
[Slaves] 27
[Logs]
[System] 28
[Slaves] 29
[Accept] 30
[Clear] 31

[Router]
[Inputs] 5
[Mic/Line] 32
[Buttons] 33
[Zoning] 34
[Security] 35
[Zoning] 36
[Control] 37
[Latching] 38
[Busy] 39
[DVA stop] 40
[Clear-all] 41
[Select DVA] 42
[Audio]
[Surv] 43
[LF] 44
[Mid] 45
[HF] 46
[HPFilter] 47
[EQ] 45
[Fade] 48
[Chime] 49
[Gain] 50
[Inputs] 51
[Ctrl]
[Pri] 52
[Class] 53
[PTT] 54
[PTT zones] 55
[Name] 56

[DVA] 57
[Gain] 58
[Inputs] 59
[Priority] 60
[Name] 61
[Class] 62

[Outputs] 6
[Level] 63
[Surv] 64
[Override] 65
[Name] 66

[Ctrl] 7
[Misc] 8
[Sounder] 78
[Audio Recovery] 79
[Channels] 9
[Slaves] 10
[Pri] 11
[Slave-O/Ps] 12
[Set-Tx-Dir] 13
[Slave-Timeouts] 14
[Poll-ctrl] 15
[Loop test] 80

[Contacts] 67
[Zoning] 68
[Latching] 69
[Busy] 70
[DVA stop] 71
[Control] 72
[Clear-all] 72
[Desc] 73
[Permanent] 74
[Remote] 75
[Analogue] 76
[Digital in] 77

[Network]
[Config]
[Diagnostics]

[Site Info]
[Int-ID] 16
[Name] 17

[Misc]
[Software] 18
[Temperature] 19
[Clear-Log] 20
[Async-Port] 21

Description of menu functions

ACU Menu reference	Description
1	When logged off, allows entry of user password. When logged on the sub-menu is accessible.
2	Log off user – causes saving of configuration data, if modified while the user was logged on.
3	Change user password.
4	Clear all configuration data.
5	Configuration of input channels.
6	Configuration of output channels. Once the user has selected the specific output channel, submenus are presented.
7	Configuration of contacts and remote I/O units.
8	Miscellaneous router configuration - enables the fault sounder to be suppressed when a emergency microphone is in use.
9	Defines the number of output channels connected to the audio loop (range 1 - 3, normally 3). Must match hardware and DAU configuration.
10	Defines the number of DAUs (also referred to as slaves) on the network. DAU addresses must be assigned in ascending numerical order from 1 to maximum 30. It is important that the correct number of DAUs is configured. If fewer DAUs are configured than are physically present, the Audio Control Unit will not attempt communication with the higher addresses. If more DAUs are configured, network performance will suffer as the Audio Control Unit attempts to communicate with DAUs that are not present.
11	Defines priority for each DAU input source. Used when routing DAU audio sources from Audio Control Unit trigger events. All DAUs are assumed to have the same inputs with the same priorities.
12	Defines the DAU output names.
13	Enables the data direction to be changed from Bidirectional (normal), to Upstream Only or Downstream Only for de-bug purposes. This is so data network failure locations can be accurately isolated.

ACU Menu reference	Description
14	This gives a list of DAUs and a count for each which is incremented when the DAU fails to respond to a message from the Audio Control Unit. Again this is used to diagnose the location of comms faults.
15	This gives a list of DAUs and enables them to included or excluded from the polling loop. This enables faulty units to be temporarily isolated and taken out of service.
16	Sets address for Audio Control Unit.
17	Defines a name for the Audio Control Unit. For reference only
18	Displays the version numbers of software for Control Processor, DSP and CPLD.
19	Configures an internal temperature which when exceeded will set a fault.
20	Clears the history of last 200 faults registered.
21	Configures the RS232 port. Defines whether the system is connected to the network or to a local PC host. If connected to a PC host, defines whether the connection is direct or via a modem, and whether or not to implement hardware flow control (i.e. suspend transmission when CTS is not asserted). When connected to the PC host, the following communications parameters are established: 9600 bps, no parity, 8 data bits, 1 stop bit.
22	Allows setting of date and time. The configured time is periodically sent to DAUs on the network.
23	Defines the Audio Control Unit name. For reference only.
24	Performs a test of LEDs and internal sounder - LEDS are turned off, then on in sequence while the sounder is turned on and off. On completion of the test, normal LED and sounder operation resumes.
25	Allows the selection of an input channel to be routed to the on-board monitor speaker.
26	Displays active faults on the Audio Control Unit - user can scroll through faults using up/down keys or the rotary encoder.

ACU Menu reference	Description	ACU Menu reference	Description
27	Displays active faults on a selected DAU. User first selects the DAU from a list of DAUs with active faults. Selection of the DAU and scrolling through active faults is performed using up/down keys or rotary encoder.	34	Allows each microphone button to be configured as one of: 1. Mic routing. This option identifies the button function as zone selection - i.e. the button is pressed to select an output or group of outputs to which audio (microphone or DVA) is subsequently routed. Having chosen this option, the user then identifies which outputs are affected. The outputs in question are the outputs of the slave nodes on the network. Outputs 1 to 4 map to outputs 1 to 4 of the slave node with address 1. Outputs 5 to 8 map to outputs 1 to 4 of the slave node with address 2 etc.
28	As for Faults/Status/ System, but in respect of the fault log (history of last 200 faults) rather than active faults.		
29	As for Faults/Status/ System, but in respect of the fault log (history of last 200 faults) rather than active faults.		2. DVA routing. This option identifies the button function as complex routing - i.e. when the button is pressed a route is made that connects any desired combination of inputs to outputs. Having chosen this option the sub-menus "Zoning", "Control" and "Clear-all" are offered.
30	Acknowledge active faults. Turns off the internal sounder, steadies the fault LED. User may specify whether to accept faults on control node, one slave or all slaves.		
31	Clear faults. Turns off the internal sounder, clears the fault LED. Faults for which the causes are still present are re-reported. User may specify whether to clear faults on control node, one slave or all slaves.		3. Play DVA. This option identifies the button function as "play DVA to selected outputs". When the button is pressed a route is made connecting a DVA audio source to outputs which have been pre-selected using buttons configured for zone selection. Having chosen this option, the sub-menus "Select DVA", "Control" and "Clear-all" are offered.
32	Allows the microphone/line inputs to be configured as one of: Simple emergency microphone / zoned emergency microphone / paging microphone / single button microphone / miscellaneous input. Once the input type has been selected for a given input, applicable sub-menus are presented.		4. All call. This option identifies the button function as "select all zones". When the button is pressed, all outputs which have been configured as being affected by any zone selection buttons are pre-selected - i.e. the button press has the same effect as if all zone selection buttons on the microphone have been pressed.
33	Applicable to zoned emergency microphone and paging microphone only.		
		35	Determines whether or not the button function is protected by a microphone key switch, and if so, which key switch. When protected, the key must be turned on for the button function to be allowed.
		36	Applicable when a button is configured for DVA routing. Allows each output to have an input associated with it. The outputs in question are the outputs of the DAUs on the network. The inputs may be either one of the Audio Control Unit audio sources, or a DAU DVA.
		37	Applicable when a button is configured for DVA routing or play DVA.

ACU Menu reference	Description	ACU Menu reference	Description
38	Defines whether the button in question (play DVA or DVA routing) is used to both make and clear the route. If latching is selected, a reset button is also defined; in this configuration the play DVA or DVA routing button initiates the route, and the reset button terminates it. If latching is not selected then the first press of the button in question (play DVA or DVA routing) initiates the route, and the second press terminates it.	54	Applicable only to inputs configured as Single Button Microphone.
39	Defines whether or not this route should cause busy indication on the LEDs associated with microphone zone select buttons	55	Defines which to which outputs a route is made when PTT button is pressed. The outputs in question are the outputs of the DAUs on the network. Outputs 1 to 4 map to outputs 1 to 4 of the with address 1. Outputs 5 to 8 map to outputs 1 to 4 of the DAU with address 2
40	Defines whether, when the route is cleared, it should be cleared immediately or when all DVAs on the route have completed.	56	Name of the input - for reference only.
		57	Allows the selection of one of the four available DVA messages. Once the specific DVA has been selected, the corresponding menus are displayed.
41	Clears down the route associated with the play DVA or DVA routing button.	58	TBA
42	Applicable when a button is configured for Play DVA. Defines which DVA should be played when the button is pressed. The DVA may be configured as either a Audio Control Unit or DAU DVA.	59	Defines the gain to be applied to the DVA, in respect of any output to which it may be routed.
		60	Defines the priority assigned to the DVA.
		61	Name of the DVA - for reference only.
43	Defines the input surveillance tone detection threshold.	62	Defines the classification of the DVA (non-emergency, low-level emergency, high-level emergency).
44	Defines relative gain for low frequency band of 3 band equaliser.	63	Gain in dB to be applied to the output.
45	Defines relative gain for mid frequency band of 3 band equaliser.	64	Defines the type and level of surveillance tone imposed on the output. Type can be none, continuous or pulsed. For Audio Control Unit, the type should be set to continuous.
46	Defines relative gain for high frequency band of 3 band equaliser		
47	Defines whether or not a high pass filter is to be imposed on the audio input.	65	Gain in dB to be applied to the output in the event that the audio bypass system is used (failure of microprocessor).
48	Defines time over which this audio channel is faded in/out when audio sources change.	66	Name of the output - for reference only.
49	Defines type and level of chime, if any, to be sounded prior to microphone announcement.		
50	Not used.		
51	Defines the gain to be applied to the input audio, in respect of any output to which it may be routed.		
52	Defines the priority assigned to the input channel.		
53	Defines the classification of announcements made from the input channel (non-emergency, low-level emergency, high-level emergency).		

ACU Menu reference	Description	ACU Menu reference	Description
67	Allows the user to select a contact, and define its use as one of: 1. Not configured 2. Routing - when the contact is activated a route is made, connecting any combination of inputs to outputs. Submenus "Zoning", "Control" and "Clear-all" are displayed when routing is selected for a contact. The outputs in question are the outputs of the slave nodes on the network. Outputs 1 to 4 map to outputs 1 to 4 of the slave node with address 1. Outputs 5 to 8 map to outputs 1 to 4 of the slave node with address 2 etc. The inputs may be either control node audio sources, or slave node DVAs. 3. External fault - when the contact is activated, a fault is logged by the router. Submenu "Desc" is displayed when external fault is selected for a contact. The contact may also be used to clear a route (reset) - but this usage is set indirectly (see "latching" submenu below). Contacts 1 to 10 are implemented as analogue inputs where fault conditions may be detected by monitoring the voltage (user selects the "surv" option to enable fault monitoring). Contacts 11 to 22 are implemented as digital inputs where fault conditions cannot be detected (the "not surv" option is imposed).	70	Defines whether or not this route should cause busy indication on the LEDs associated with microphone zone select buttons
		71	Defines whether, when the route is cleared, it should be cleared immediately or when all DVAs on the route have completed.
		72	Clears the route associated with the contact.
		73	Applies when the contact is configured as an external fault. Allows the user to enter text that describes the fault condition.
		74	Allows each output to have an input associated with it to which it is permanently routed. Normally used to route background music at low priority to desired areas. The outputs in question are the outputs of the slave nodes on the network. The inputs may be either one of the control node audio sources, or a slave node DVA.
		75	Configures units on the RS485 bus. The user selects a remote unit by multi-drop address. The Expand I/O (also known as Remote I/O) unit provides 12 analogue inputs, 12 digital inputs and 12 digital outputs which may be configured for a variety of purposes. On the Control Node, submenus "analogue" and "digital in" are displayed when an expand I/O unit is configured.
68	Allows each output to have an input associated with it (to which it is routed when the contact is activated). The outputs in question are the outputs of the slave nodes on the network. The inputs may be either one of the control node audio sources, or a slave node DVA.	76	The user selects the channel (1 to 12), and then defines the use of that channel. On the Audio Control Unit, the channel can only be used as a contact for fault reporting.
69	Defines whether the contact in question is used to both make and clear the route. If latching is selected, a reset contact is also defined; in this configuration activation of the first contact initiates the route, and activation of the reset contact terminates it (provided the first contact has been released). If latching is not selected then activation of the contact initiates the route, and release of the contact terminates it.	77	Allows the user to select a contact, and define its use in exactly the same way as described under "Contacts" above. On the Audio Control Unit, the channel can only be used as a contact for fault reporting, or route generation.
		78	-
		79	Automatic fault recovery to be turned off when commissioning and fault finding the system
		80	Sends 20 test messages around the loop in a pre-selected direction and counts the number received. This is used as part of the commissioning and fault finding process.

Typical fault messages

The fault message list provides information on the fault codes that will appear on the display if there is a fault condition, see illustration below. The general meaning of the code is given in the table, along with information on suggested action that can be taken. The fault codes have been arranged in ascending order for ease of use.

INT-Control 15 Jan 2005 18:04:26
↓Configuration↓ Tests Faults

Display alternates display of Date and time with Fault status

If multiple faults present they are displayed cyclically

```
INT-Control  No Faults Present

↓Configuration↓ Tests  Faults
```

OR   **Fault Code**

```
INT-Control  INT01 LOOP FAIL

↓Configuration↓ Tests  Faults
```

Fault Code(s) Reported and logged	meaning of the fault code	Suggested Action that can be taken of possible removal of the fault.
DVA n LONG DVA FAULT Or DVA n SHORT DVA FAULT	DVA failure	The router in the electronics module is faulty. This, or the entire Electronics Module will need replacing.
INT-01 AUD TOTAL	Audio Loop Fault, not recovered	A complete failure of the Line Driver in the Audio Control Unit would account for this fault. The presence of two simultaneous cabling faults can also give rise to this condition
INT-01 FAULT 01	Internal Fuse	Check internal fuse
INT-01 FAULT LOG ERASED	Failure on Internal fault log	If the unit detects a problem with a fault log this fault is logged, the system will install a blank log and keep working functionally. If repeated occurrence then the router in the electronics module is faulty. This, or the entire Electronics Module will need replacing.
INT-01 LOOP FAIL	Network Loop Fail	Apply diagnostic features to identify where fault is. Investigate any failure of cabling or electronics in the vicinity of the break.
INT-01 NIU FAULT	Communications failure between the Audio Control Unit and its Network Interface unit	Suspect the NIU card or its interconnection to the router.
INT-01 NON-VOL MEMORY	Failure of Configuration Non-volatile memory	The router in the electronics module is faulty. This, or the entire Electronics Module will need replacing.
INT-01 SUPPLY FAULT	Failure of supply to Router within the unit.	Check mains and battery switches are on and that both supplies are present.
INT-XX SLAVENODE COMMS XX=address of particular slave	Failure to communicate with slave	Apply diagnostic features to identify where fault is. Investigate any failure of cabling or electronics in the vicinity of the break.

Fault Code(s) Reported and logged	meaning of the fault code	Suggested Action that can be taken of possible removal of the fault.
`INT-XX SLAVENODE FAULT XX=address of particular slave`	Slave unit reporting to Control that it has one or more faults.	Use the Audio Control Unit facilities to view the particular slaves active faults in order to determine specific fault
`IP<n> MONITORED CONTACT n=01 to 10`	Analogue Monitored Contact fault	Check wiring between the contact and router
`IP<n> AUDIO INPUT n=01 to 04`	Input Audio Surveillance	Check the audio cabling or Power supply cabling between microphone to input or Network Channel to input.
`IP<n> CONTACT n=01 to 22`	Fault Reported by contact configured as a fault input	The CONTACT text is user configurable to be descriptive of the particular fault
`IP01 ALLCALL LED or IP02 ALLCALL LED depending on channel`	LED Fault ALL-CALL-ONLY	Check wiring between router and ALL-CALL LEDs
`IP01 ALLCALL PTT or IP02 ALLCALL PTT depending on channel`	Fire Mic Contact Fault	Check wiring between FireMic input hardwired PTT and router.
`IP01 SPEAK LED or IP02 SPEAK LED depending on channel`	LED Fault SPEAK-NOW	Check wiring between router and SPEAK-NOW LEDs.
`MIC<n> FAULT 09 n=01 to (Mic Processor stops)`	Mic ROM Error	Microphone electronics will need replacing
`MIC<n> MIC CAPSULE n=01 to 04`	Mic Capsule Fault	Check continuity of microphone capsule or any associated wiring
`MIC<n> MIC COMMS n=01 to 04`	Mic Comms Fault	Check data cabling or power supply cabling between microphone and router.
`MIC<n> mic COMMS n=01 to 04`	Mic CPU Reset	A one-off occurrence may be experienced due to EMI or transients. Repeated occurrences indicate faulty microphone electronics.
`MIc<n>FAULT 09 n=01 to 20 (Mic Processor stops)`	Mic RAM Error	A one-off occurrence may be experienced due to EMI or transients. Repeated occurrences indicate faulty microphone electronics.
`NET-Y/XX AUD RECOVERED Y= Network Audio Channel (1,2,3) on which fault occurred XX=Address of Slave Unit where isolation occurred i.e if value is 1, the faulty segment is between 1st and 2nd Slaves. Etc.`	Audio Loop fault, but recovered by isolation	Use the diagnostic information to pinpoint failure in cabling. Both open and short circuits are isolated in this way.

Fault Code(s) Reported and logged	meaning of the fault code	Suggested Action that can be taken of possible removal of the fault.
`REMXX ANALOGUE I/P nn XX=Remote I/O Unit Address nn=Analogue Input Channel`	Remote I/O Unit analogue channel fault (open or short)	Check wiring of Volume Control or selector on specified Analogue channel
`REMXX DIGITAL O/P nn XX=Remote I/O Unit Address nn=Analogue Input Channel`	Remote I/O Unit Digital Output channel fault (load disconnected or over current)	Check load connection on particular Digital channel
`REMXX FUSE XX=Remote I/O Unit Address`	Remote I/O Unit Fuse	Possible short circuit or overload on the I/O units DC output.
`REMXX PROTOCOL`	Fire Loop Interface with incompatible protocol	The Fire Loop interface protocol is not supported by the unit
`REMXX REMOTE I/O COMMS XX=Remote I/O Unit Address`	Remote I/O unit Comms Fault	Check the Comms and power wiring to Remote I/O Unit. Check RS485 termination. Check that address of Remote I/O unit is correct. If all above ok, suspect the unit itself. Check the unit's internal CPU and COMMS LEDs.
`REMXX RESET XX=Remote I/O Unit Address`	Remote I/O Unit Reset	In repeated occurrence, the Remote I/O unit should be replaced
`REMXX TEMP XX=Remote I/O Unit Address`	Remote I/O Unit Over Temperature (70 °C)	The system should be investigated to see how such a high ambient temperature occurred

Mechanical

700mm

510mm

155.2mm

29mm

452mm

FIXING HOLES 10mm DIA

642mm

29mm
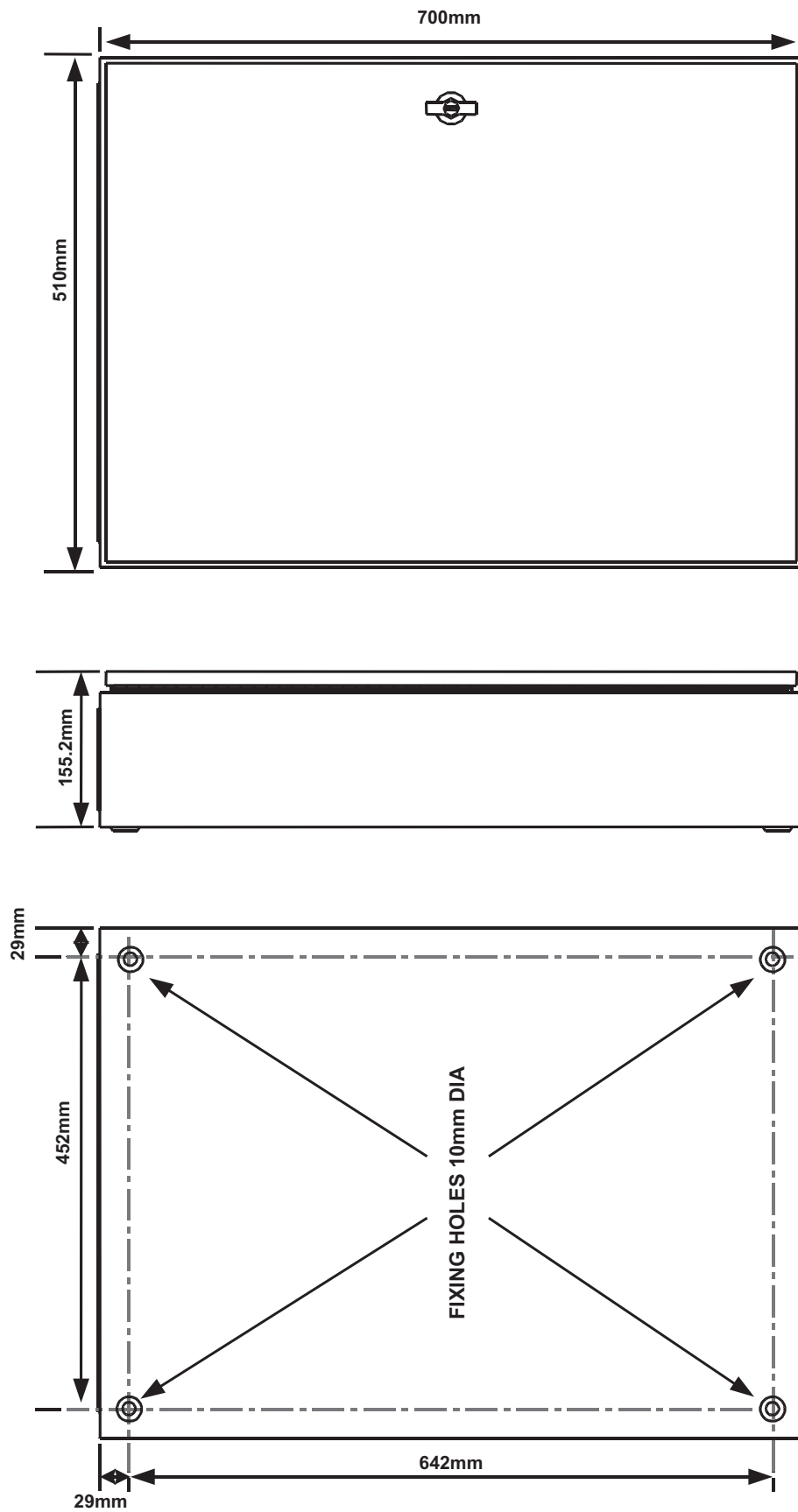
System Parts

VA-1311	Vigilon Voice Audio Control Unit (Master ACU) Blank (no selection button or microphone)
VA-1314	Vigilon Voice Audio Control Unit (Master ACU) with all call buttons
VA-1312	Vigilon Voice Audio Control Unit (ACU) with all call buttons, 20way zone selection buttons & Emergency microphone
VA-1316	Vigilon Voice Audio Control Unit (ACU) with all call buttons, 40way zone selection buttons & Emergency microphone
VA-1317	Vigilon Voice Audio Control Unit (ACU) with all call buttons, 60way zone selection buttons & Emergency microphone
VA-1315	20-way Emergency desk console & Emergency microphone with 20 zone selection keypad
VA-1313	Vigilon Voice Slave Audio Control Unit (Slave-ACU) with all call buttons, 20 way zone selection buttons & Emergency microphone
VA-1318	Vigilon Voice Slave Audio Control Unit (Slave-ACU) with all call buttons, 40 way zone selection buttons & Emergency microphone
VA-1319	Vigilon Voice Slave Audio Control Unit (Slave-ACU) with all call buttons, 60 way zone selection buttons & Emergency microphone
VA-1341	Vigilon Voice Repeater Slave Control Unit (Repeat-Slave-ACU) with all call buttons, 20 way zone selection buttons & Emergency microphone
VA-1342	Vigilon Voice Repeater Slave Audio Control Unit (Repeat-Slave-ACU) with all call buttons, 40 way zone selection buttons & Emergency microphone
VA-1343	Vigilon Voice Repeater Slave Audio Control Unit (Repeat-Slave-ACU) with all call buttons, 60 way zone selection buttons & Emergency microphone

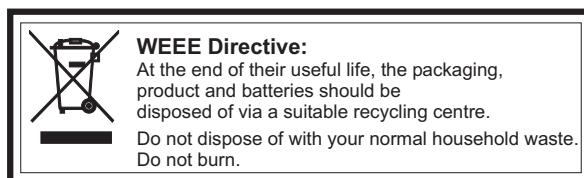|	
VA-1321	Vigilon Voice 200W Distributed Amplifier unit (includes network interface card and 1 pack of end of line resistors)
VA-1322	Vigilon Voice 400W Distributed Amplifier unit (includes network interface card and 1 pack of end of line resistors)
VA-1361	5-Zone Paging microphone console
VA-1362	10-Zone Paging microphone console
VA-1363	20-Zone Paging microphone console
VA-1364	1-Zone Emergency microphone
VA-1365	5-Zone Emergency microphone
VA-1366	10-Zone Emergency microphone
VA-1367	20-Zone Emergency microphone
VA-1381	Input/Output Expander Unit
VA-1382	Ambient Noise Sensor
VA-1383	Volume Control 1 Gang - plastic
VA-1384	Volume Control 1 Gang - metal
VA-1385	Routing control 1 Gang - plastic
VA-1386	Routing control 1 Gang - metal
VA-1387	Volume / Routing control 2 Gang - plastic
VA-1388	Volume / Routing control 2 Gang - metal
VA-1389	10K End-of-line resistors (10 pack) (for speaker circuits)
VA-1390	Line blocking capacitor for **2W** loudspeakers (10 pack)
VA-1391	Line blocking capacitor for **6W** loudspeakers (10 pack)
VA-1392	Line blocking capacitor for **14W** loudspeakers (10 pack)
VA-1393	Line blocking capacitor for **30W** loudspeakers (10 pack)
VA-1394	Line blocking capacitor for **63W** loudspeakers (10 pack)

13421-10-DC   8W / 8 ohm, 4" Round Metal Ceiling
Speaker with 1uF blocking capacitor

13421-12-DC   6W 5.25" Round Metal Ceiling
Speaker with 1uF blocking capacitor

13421-14-DC   6W 6.25" Round Metal Ceiling
Speaker with 1uF blocking capacitor

13421-15-DC   10W 5.25" Round Co-axial Metal
Ceiling Speaker with 2.2uF blocking
capacitor

13421-16-DC   10W 6.25" Round Co-axial Metal
Ceiling Speaker with 2.2uF blocking
capacitor

13421-17-DC   20W 8" Round Co-axial Metal Ceiling
Speaker with 4.7uF blocking
capacitor

13421-20-DC   4W SENTRY Vandal proof Metal
Round Cabinet Speaker with 1uF
blocking capacitor

13421-21-DC   6W SENTRY Vandal proof Metal
Square Cabinet Speaker with 1uF
blocking capacitor

13421-30-DC   6W SENTRY Vandal proof Metal
bi-directional Speakers
with 1uF blocking capacitor

13421-25-DC   6W SENTRY Vandal proof Metal
Square flush Speaker with 1uF
blocking capacitor

13421-18-DC   6W Plastic Cabinet speaker
with 1uF blocking capacitor

13421-22-DC   10W Plastic Cabinet speaker
with 2.2uF blocking capacitor

13421-19-DC   4W Weatherproof Plastic Cabinet
speaker with 2.2uF blocking
capacitor

13421-73-DC   10W Plastic Projector Loudspeaker
with 2.2uF blocking capacitor

13421-74-DC   20W Plastic Projector Loudspeaker
with 4.7uF blocking capacitor

13421-70-DC   10W Metal Projector Loudspeaker
with 2.2uF blocking capacitor

13421-72-DC   10W Bi-directional Metal Projector
Speaker with 4.7uF blocking
capacitor

13421-71-DC	20W Bi-directional Metal Projector Speaker with 4.7uF blocking capacitor
13421-42-DC	10W Round Weatherproof Plastic General Purpose Horn Speaker with 2.2uF blocking capacitor
13421-43-DC	20W Round Weatherproof Plastic General Purpose Horn Speaker with 4.7uF blocking capacitor
13421-45-DC	30W Round Weatherproof Plastic General Purpose Horn Speaker with 4.7uF blocking capacitor
13421-40-DC	20W Round Metal Horn Speaker with 4.7uF blocking capacitor
13421-44-DC	30W Weatherproof Plastic Music Horn Speaker with 4.7uF blocking capacitor
13421-80-DC	20W Sculptured Polystyrene Spherical Speaker with 4.7uF blocking capacitor
13421-51-DC	20WHigh Performance Metal Column Speakers with 4.7uF blocking capacitor
13421-52-DC	40WHigh Performance Metal Column Speakers with 10uF blocking capacitor
13421-53-DC	80WHigh Performance Metal Column Speakers with 15uF blocking capacitor
13421-54-DC	20W Music quality Metal Column Speakers with 4.7uF blocking capacitor
VA-1395	DVA Message recording charge
VA-1396	DVA Message set up charge
VA-99-01	Network Interface Card
VA-99-02	DAU electronic module - 200W (includes Network interface card)
VA-99-03	DAU electronic module - 400W (includes Network interface card)
VA-99-11	Front Panel Display Assembly (used onn ACU and DAU)

VA-99-04　　　　ACU electronic module

VA-99-05　　　　ACU door - no zone buttons

VA-99-13　　　　ACU door - no zone button,
　　　　　　　　complete with all call buttons and
　　　　　　　　Emergency microphone

VA-99-12　　　　ACU/Slave ACU door
　　　　　　　　20 way zone buttons
　　　　　　　　(order Front Panel display separately
　　　　　　　　if needed)

VA-99-06　　　　ACU/Slave ACU door
　　　　　　　　40 way zone buttons
　　　　　　　　(order Front Panel display separately
　　　　　　　　if needed)

VA-99-07　　　　ACU/Slave ACU door
　　　　　　　　60 way zone buttons
　　　　　　　　(order Front Panel display separately
　　　　　　　　if needed)

VA-99-08　　　　Repeater Slave ACU door
　　　　　　　　20 way zone buttons
　　　　　　　　(order Front Panel display separately
　　　　　　　　if needed)

VA-99-09　　　　Repeater Slave ACU door
　　　　　　　　40 way zone buttons
　　　　　　　　(order Front Panel display separately
　　　　　　　　if needed)

VA-99-10　　　　Repeater Slave ACU door
　　　　　　　　60 way zone buttons
　　　　　　　　(order Front Panel display separately
　　　　　　　　if needed)