

Vigilon Voice - Distributed Amplifier Units

Data, Installation and Operation

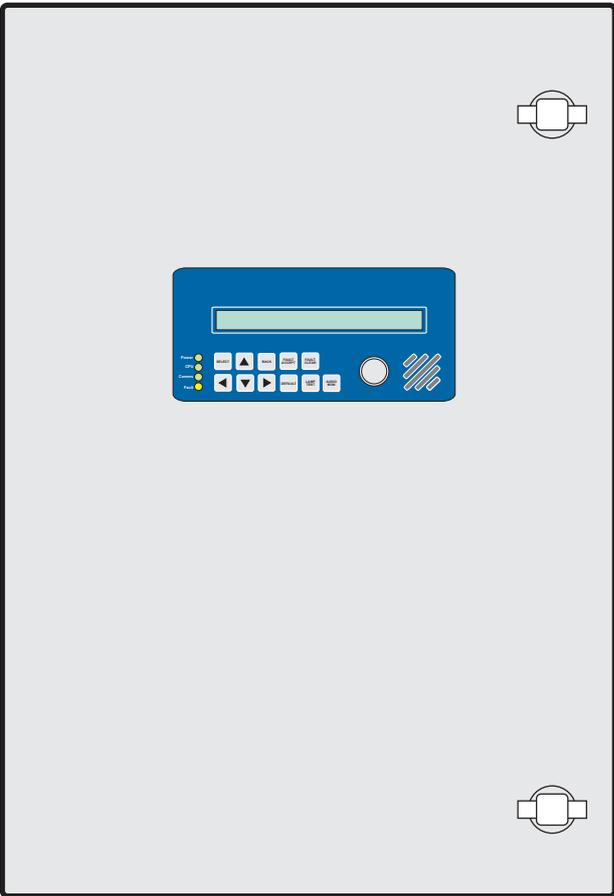


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Description

The Vigilon Voice DAUs are a self-contained wall-mounted units. The units contain all audio processing, amplification and battery back up that is needed to provide a fully compliant BS5839 : Part 8 system. The DAUs are available in 200W and 400W variants.

The DAUs can be networked to form a larger distributed voice alarm system.

Full Digital Signal Processing (DSP) provides Equalisation, Chimes and Surveillance functions as well as performing audio routing. All parameters are set digitally.

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.
When the DAUs are networked the inputs 1, 3 and 4 are not available.
- Audio outputs: 4 outputs.
- Digital messages:
 - DVA1 & DVA2 - 66 second messages
 - DVA3 & DVA4 - 50 second messages

The Vigilon 200-DAU uses High Efficiency Class D amplifiers with 200W total power typically configurable as:

4 zones of 50W :	(25W A, 25W B)	+ 100W Standby
2 zones of 100W:	(50W A, 50W B)	+ 100W Standby
1 zone of 200W:	(100W A, 100W B)	+ 100W Standby

The Vigilon 400-DAU provides 400W total power typically configurable as:

4 zones of 100W:	(50W A, 50W B)	+ 100W Standby
2 zones of 200W:	(100W A, 100W B)	+ 100W Standby
1 zone of 400W:	(200W A, 200W B)	+ 100W Standby

Loudspeaker lines fault monitoring uses a DC monitoring method in conjunction with high precision 10k Ohm end-of-line resistors. This method of monitoring requires each loudspeaker to be fitted with a DC blocking capacitor.

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

A Vigilon voice interface is incorporated to allow communication with a device loop of a Vigilon fire system.

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.

Product specifications

General

AC Supply Voltage	230V +10 , -6% rms 50Hz AC	
Maximum AC Power Consumption (100V 1kHz sinewave into rated resistive loads)	Vigilon 200-DAU 600VA	Vigilon 400-DAU 800 VA
AC Supply Fuse Rating (internal) (use fuses to IEC 60127)	Vigilon 200-DAU T5 A H	Vigilon 400-DAU T5 A H
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	Vigilon 200-DAU 2 - 24 Ah Valve Regulated SLA. YUASA NPL24-12	Vigilon 400-DAU 2 - 38Ah Valve Regulated SLA. YUASA NPL38-12
DC Supply Fuse Rating	T25A	
Dimensions (H x W x D)	Vigilon 200-DAU 700mm x 510mm x 160mm	Vigilon 400-DAU 790mm x 580mm x 204mm
Weight	Vigilon 200-DAU 31kg less batteries 20kg weight of batteries 51kg total weight	Vigilon 400-DAU 42kg less batteries 28kg weight of batteries 70kg total weight
Temperature Range (storage and operating)	-5°C to +50°C	
Humidity Range	0% to 93% Non Condensing	

Audio

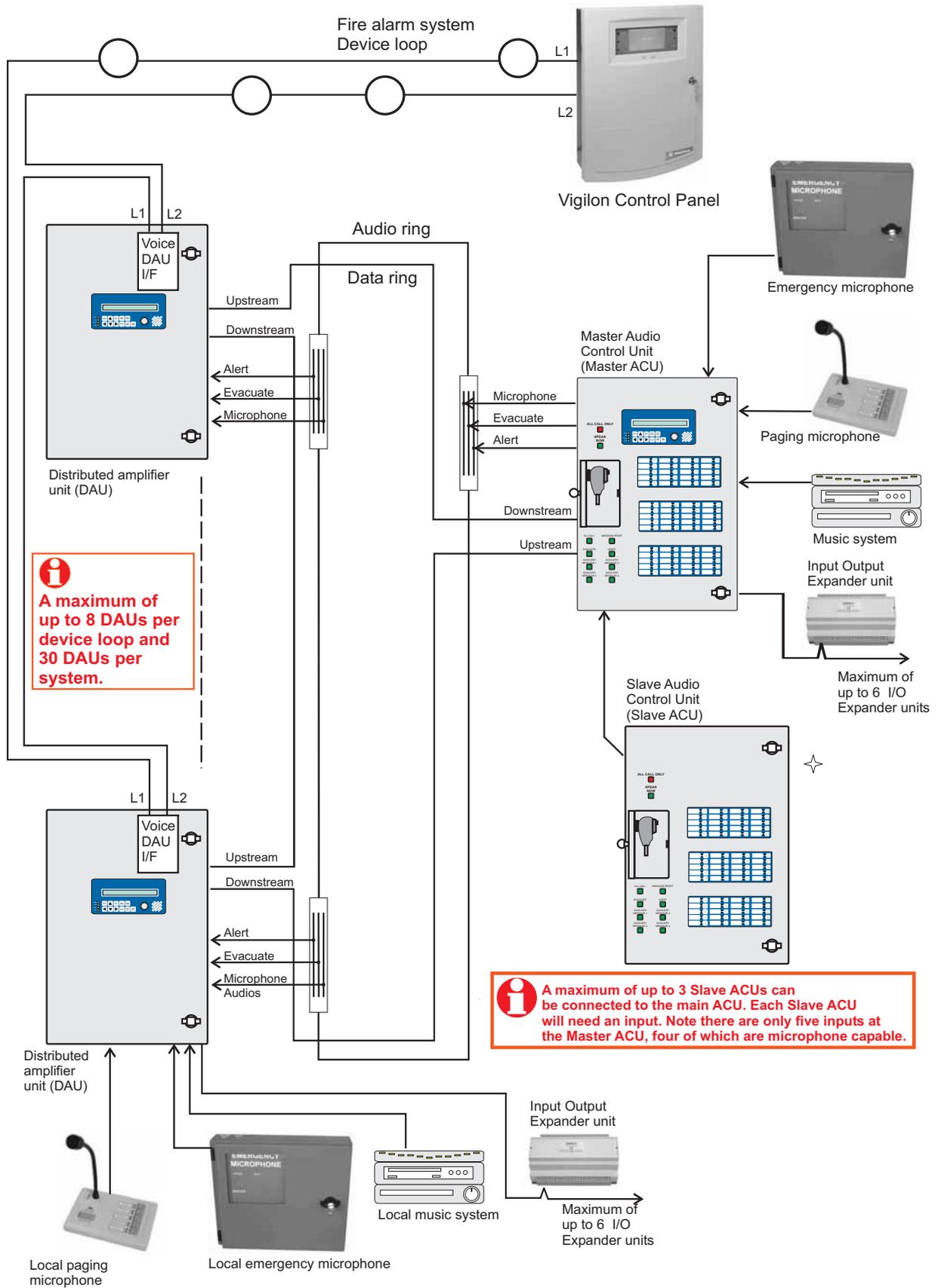
Audio Input									
Sensitivity and Impedance: Input 1 to 4 Input 5	-20dBu (77mV) @ $Z \geq 10k\Omega$ Suits 1-2V rms units $Z \geq 5k\Omega$								
Input Overload Margin	40dB								
Input Attenuator Range	0-64dB								
Equalisation	<table border="0"> <tr> <td>LF Cut</td> <td>-12dB/Oct HPF at 200Hz</td> </tr> <tr> <td>Bass</td> <td>± 12dB 100Hz shelving</td> </tr> <tr> <td>Mid</td> <td>± 12dB 2.5kHz</td> </tr> <tr> <td>Treble</td> <td>± 12dB 10kHz shelving</td> </tr> </table>	LF Cut	-12dB/Oct HPF at 200Hz	Bass	± 12 dB 100Hz shelving	Mid	± 12 dB 2.5kHz	Treble	± 12 dB 10kHz shelving
LF Cut	-12dB/Oct HPF at 200Hz								
Bass	± 12 dB 100Hz shelving								
Mid	± 12 dB 2.5kHz								
Treble	± 12 dB 10kHz shelving								
Input Surveillance Tone	20-30Hz Required Level 0 to -40dBFS								
Audio Output									
Equalisation Graphic Equaliser	± 12 dB at 125, 250, 500, 1k, 2k, 8k, 16k Hz								
Surveillance Tone	10dBu to -30dBu 30Hz Pulsed Mode=1sec on 20sec off.								
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 at 1m from the 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

Power Amplification

Output Voltage Nominal	100V RMS into 200Ω (50W mode) 100V RMS into 100Ω (100W mode)
Output Power	50W Mode: Nominal rated (21V battery): 50W into 200Ω Maximum (mains operation): 72 W into 200Ω or 62.5 W into 160Ω 100W Mode: Nominal rated: (21V battery): 100W into 100Ω Maximum (mains operation): 144 W into 100Ω or 125 W into 80Ω
Regulation at rated load	No load to full load, better than 1.5dB
Efficiency	75%
Fusing	1 x F6.3A 20mm per amplifier
Frequency response	100Hz-18kHz ±3dB
Total Harmonic Distortion (at -3dB below 100V; full load)	<0.5%
Residual Noise	Better than 80dB (A-weighted) below full output

System architecture



System overview

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

The primary function of the Master 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 Control Unit.

The Control Unit allows a number of “slave” microphones to be supported using Secondary 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 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 parameters

Products	Maximum
Distributed Amplifier units	Up to 8 per device loop and 30 per system
‘slave’ control units that can be added to a 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)
- 0.5mm² 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 the signal cables to the one recommended.

ESD Precautions

This product contains static-sensitive devices. Observe ESD precautions when working on the equipment with the cover removed and when 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 electronics module's cover is removed then hazardous voltages are still accessible even if the Internal Mains Isolator switch is OFF.

Fire / Burn safety



External 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 electronics 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

You will need

- The Vigilon Voice DAU unit complete with electronic 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

(Vigilon Voice 200-DAU shown)

The electronics module must be removed from the chassis by first disconnecting the ribbon cables at the front door. Remove the two transit brackets secured by the top two nuts, marked 'A' in the diagram below. To do this remove a nut and then the transit bracket and then refit the nut once the transit bracket is removed. Disconnect the earth from the electronic module to the backbox. The electronic module may now be unhooked from the chassis plate and stored in a safe place to avoid damage or dust ingress during the installation procedure.

Backbox with Chassis



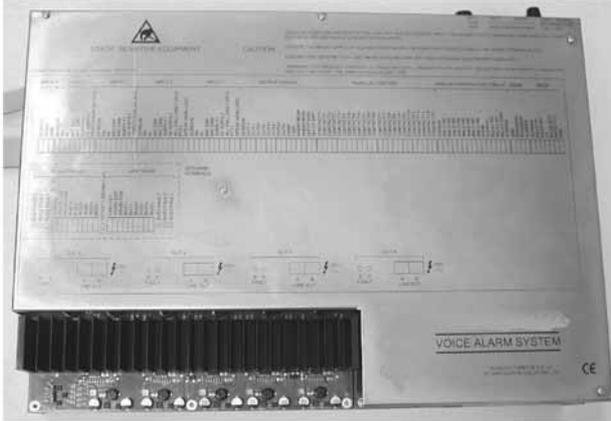
- Now remove the chassis from the Vigilon DAU back-box by undoing the four securing nuts.
- Remove the gland-plate from the Vigilon DAU back-box by undoing the securing screws.
- Secure the Vigilon DAU back-box to the wall.



The wall and fixings must be capable of safely bearing the weight of the equipment with batteries - 50kg for 200-DAU and 70kg for 400-DAU..

- Ensure that the wall is made of a suitable material (not stud walls for example) and that adequately rated fixings are used.
- Refit the chassis to the backbox.
- Fit all glands to the gland plate and refit to the Vigilon DAU. 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.

Electronics module



Remove the internal cover by first removing the 5 fixing screws to show the battery connection:



- Carefully lift the Vigilon DAU electronics module into place and offer up the 'hooks' to mating slots.



Take the weight of the unit using one hand at the lower right hand corner while using the other hand to guide the top left of the unit.

Do not lift by the bottom left hand corner as this is likely to damage the exposed electronics. Never lift the unit by the black heatsink.

Lifting the electronics module into place



Although the batteries are shown in the above picture they are actually fitted at a later stage.



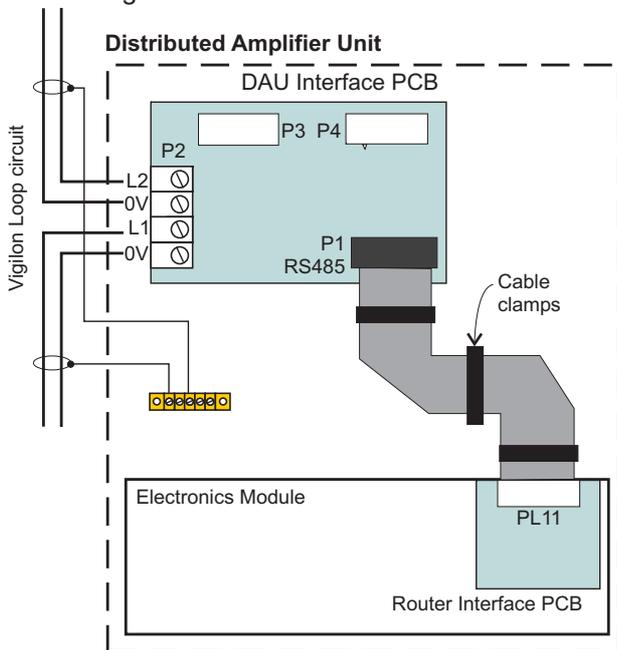
Ensure that the mains and battery isolator switches are in the off position. Ensure that the mains supply to the unit is isolated.

- Connect all field cabling to the appropriate terminal blocks; it is prudent to check speaker circuits with impedance meter and a multi-meter set to a DC resistance range prior to connection.
- Reconnect the ribbon cable from the Voice interface PCB connector P1 (RS485) to the Router Interface PCB connector PL11, located in the electronics module.
- Make the device loop connection to the DAU Interface PCB.

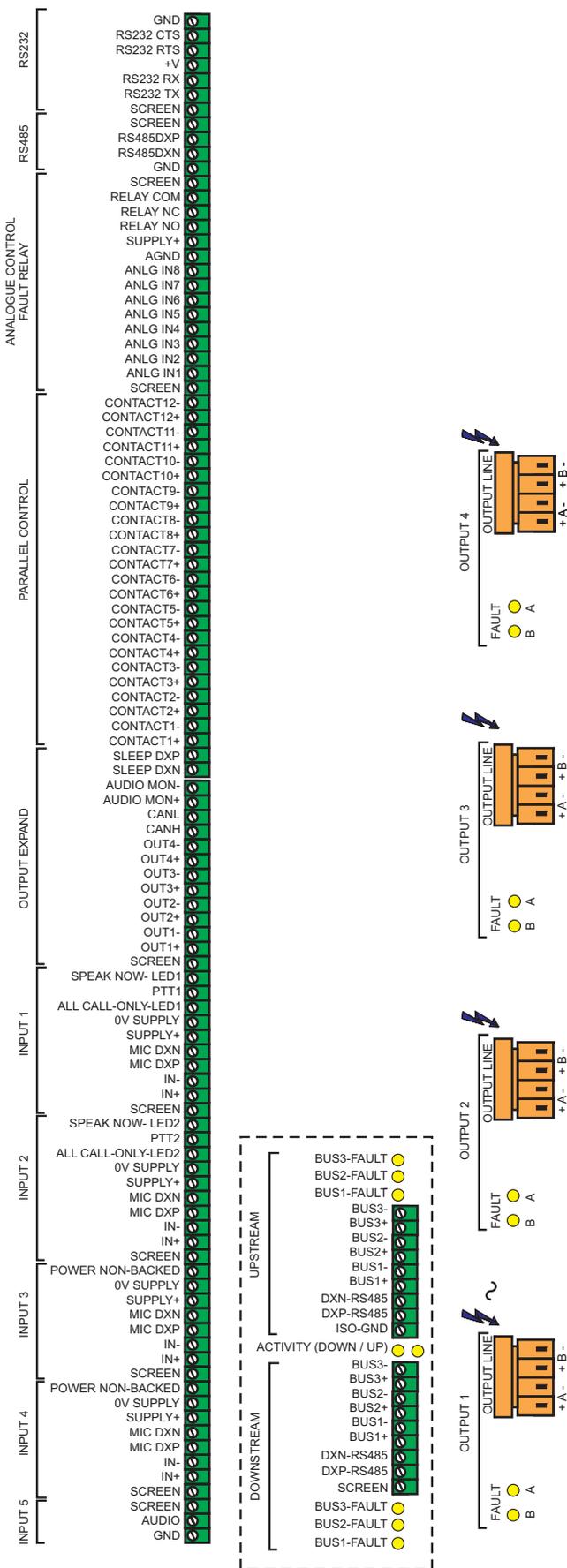
- Lower the module until it is securely seated.
- Connect the ribbon cables from the electronics module to the board on the door assembly.

DAU Interface PCB

The DAU Interface PCB (part number 2434T810) allow DAUs to interface with the fire alarm system. A fire event in the fire system will action the respective speaker circuits off DAUs to announce pre-recorded fire messages.



Terminals for external wiring

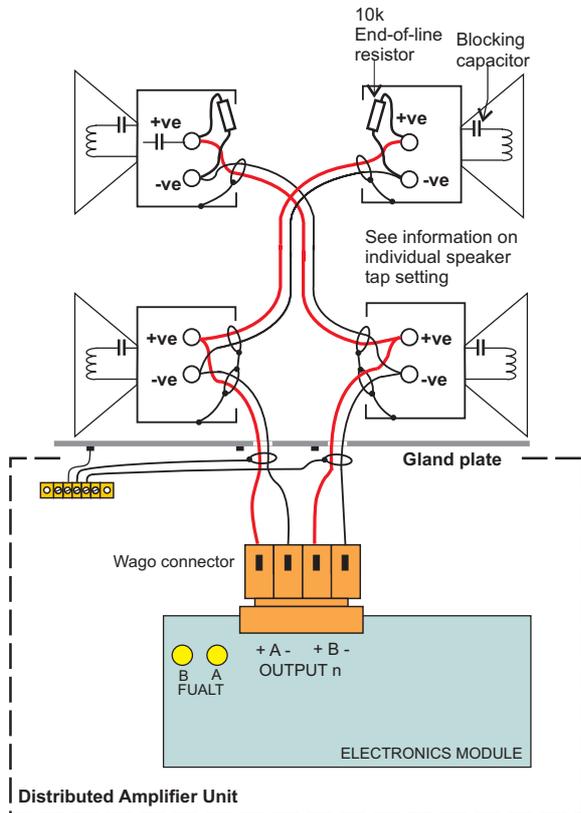


Warning: Terminals marked with a lightning bolt symbol operate at 100V rms with audio signals at up to 20kHz, the wiring to these terminals must be carried out by a trained person.

Speaker circuits

The outputs 1 - 4 are 4 off 100V speaker circuit connections. Each Line out comprises an A+B circuit for interleaved zone circuits.

Signal	Characteristic
Screen	Connection for cable screen
Zone Out+	100V rms Audio
Zone Out-	100V rms Audio



End of line Resistor

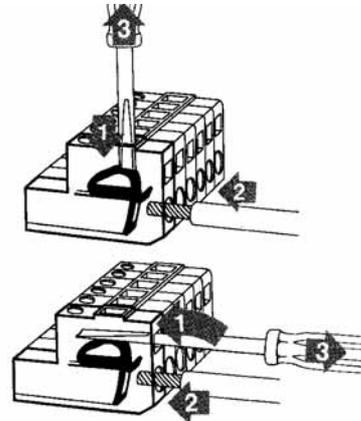
The speaker circuit and spur off must be terminated with a 10k Ohms EOL resistor, which is a high stability power resistor.

⚠ It is important to maintain adequate clearance between the EOL resistor and other components, as normally the resistor runs hot.

Cable termination

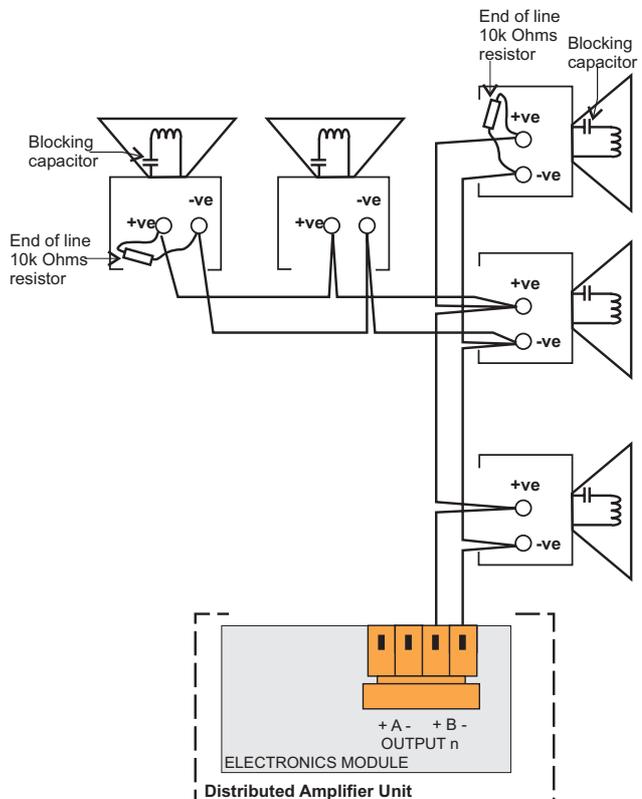
Use one of the two methods shown in the diagram to terminate the 100V power speaker cabling in the Wago connectors.

When the screwdriver is removed, the bare end of the wire will be held securely by the contact spring. To remove the wire, reverse the process.



Spur off circuits

A maximum of 10 spur speaker circuits can be connected to an output, with each one terminated with a 10k Ohms resistor. During system commissioning the number of spur circuits on an output must be programmed into the DAU, this is to ensure correct monitoring of the speaker wiring.

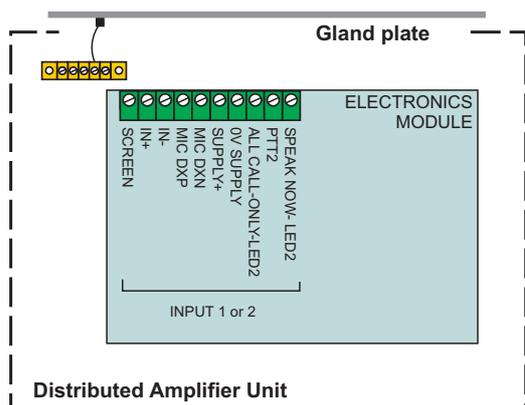


Inputs 1 or 2

The inputs 1-2 are software configurable inputs with a hardware failsafe mode for emergency operation in the event of processor failure (BS5839 requirement).

Input 1 is not available when the DAU is networked.

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.

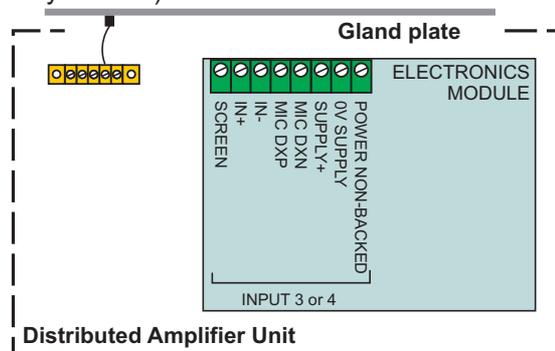


Inputs 3 or 4

The inputs 3-4 are electronically balanced universal inputs to accept microphone or line level signals.

Inputs 3 and 4 are not available when the DAU is networked.

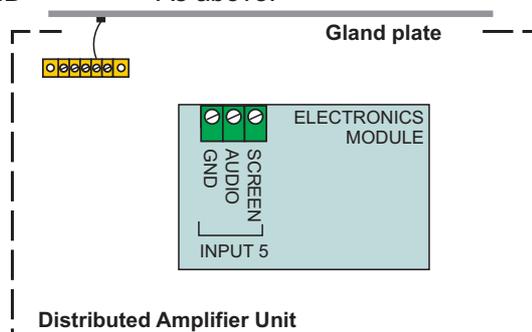
Signal	Characteristic
Screen	Connection for cable screen
In+	Balanced Audio Input. Level: 0dBu. Input impedance: 10k Ohms
In-	As above.
Mic DXP	EIA RS485 19200 baud
Mic DXN	As above
+V Supply	+V supply (12V)
0v supply	0V supply
Power Non-backed Auxiliary power supply (not battery backed)	



Input 5

This is a mono audio input for background music routing.

Signal	Characteristic
Screen	Connection for cable screen
Audio In+	Unbalanced Audio Input. Suitable for 1V-2V rms sources Input impedance: 5k Ohms
GND	As above.



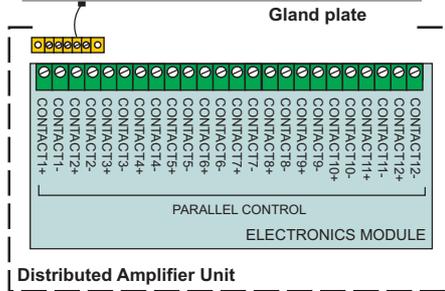
Output Expand

These terminals are for future use.

Parallel Control

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

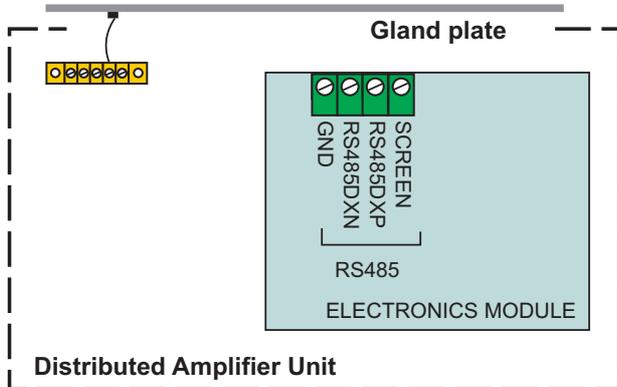
Signal	Characteristic
Contact"n"+	Opto-isolated input + connection. Inbuilt resistor to suit voltages of +12V to +40V
Contact"n"-	As above -ve connection



RS485

This is a serial control connection for interfacing with remote I/O units to be configured for expanding the Vigilon Voice control capabilities.

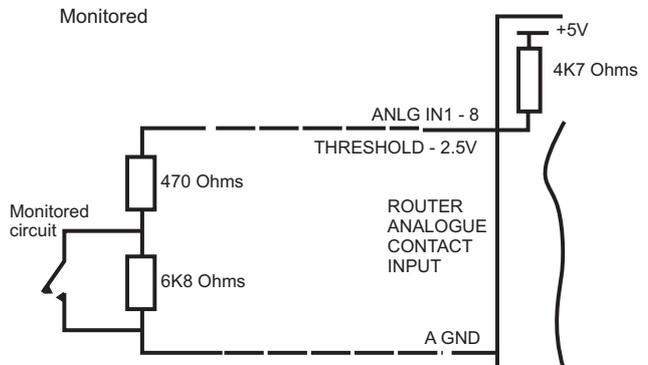
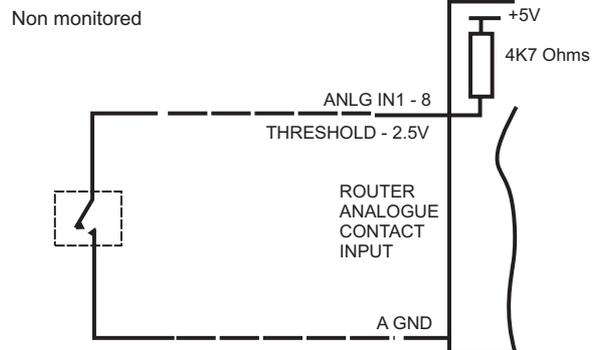
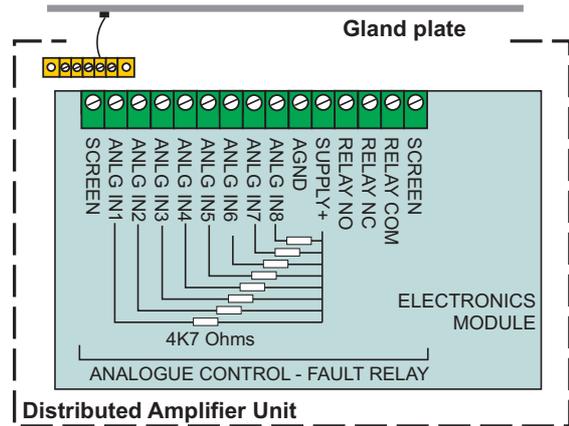
Signal	Characteristic
GND	0V Reference
RS485DXP	EIA RS485 9600 Baud
RS485DXN	EIA RS485 9600 Baud
Screen	Connection for cable screen



Analogue Control and Fault relay

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

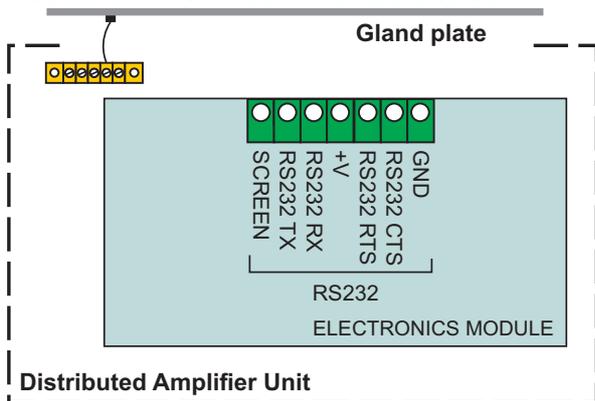
Signal	Characteristic
ANLG IN1-8	Control input (Internal pulled up to +5V by 4k7 Ohms)
A GND	Ground reference for inputs
Supply +	18V - 36V fused at 200mA
Relay NO	Volt free contact - normally open
Relay NC	Volt free contact - normally closed
Relay COM	Relay common
Screen	Connection for cable screen



RS232

Serial interface for connection PC for configuration.

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

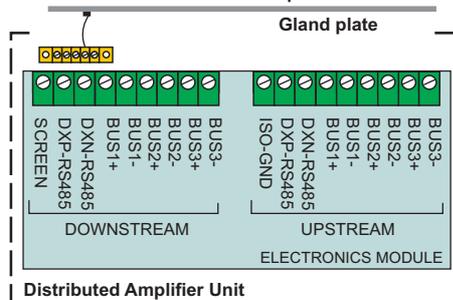


Audio and Data rings

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 (+20dBu Analogue audio)
BUS1-	Audio bus Loop 1
BUS2+	Audio bus Loop 2 (+20dBu Analogue audio)
BUS2-	Audio bus Loop 2
BUS3+	Audio bus Loop 3 (+20dBu Analogue audio)
BUS3-	Audio bus Loop 3

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



i The Audio Bus connections are outputs at the Audio Control unit and inputs at the DAUs.

Data ring

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

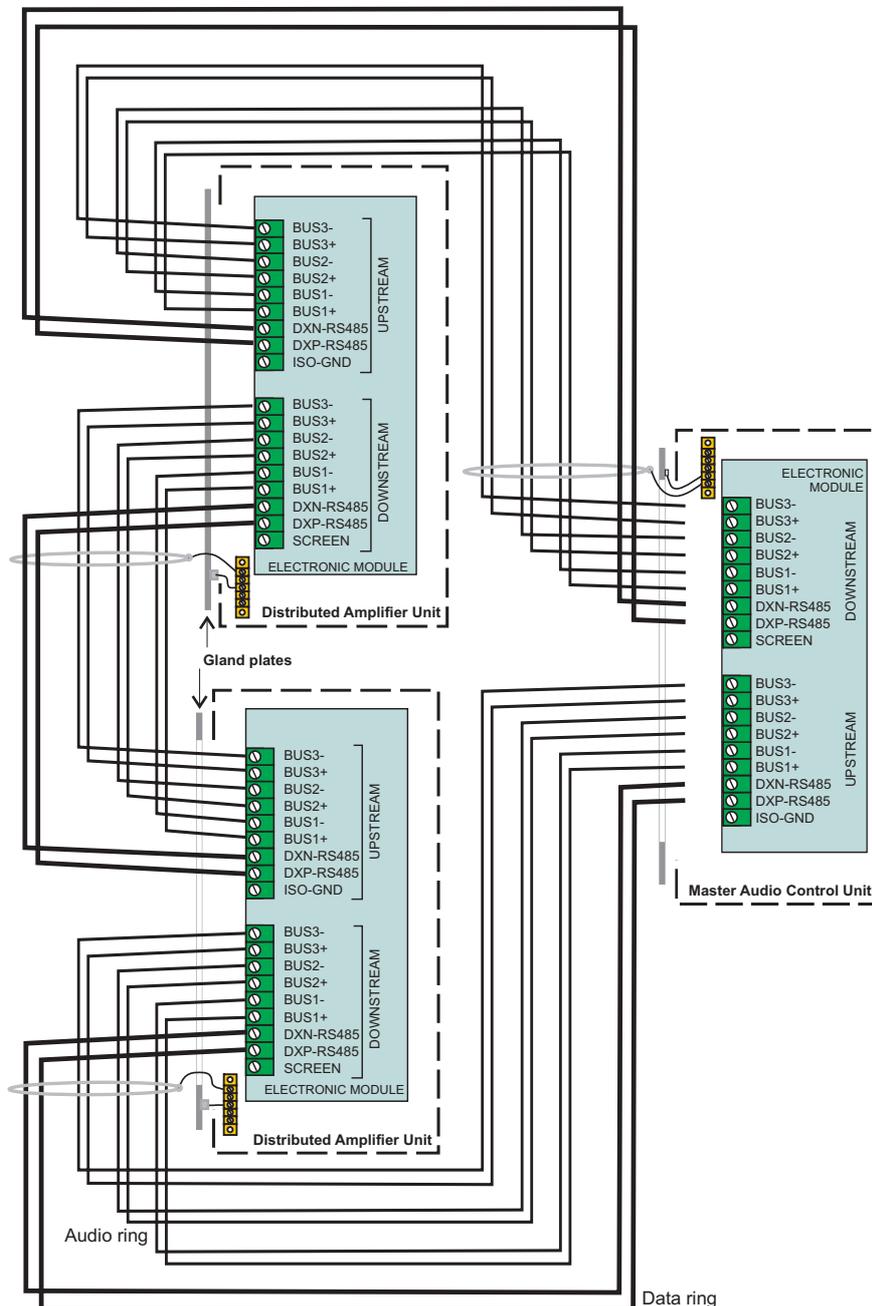
The audio is distributed as base-band audio, one pair of copper wires per channel.

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.



Mains

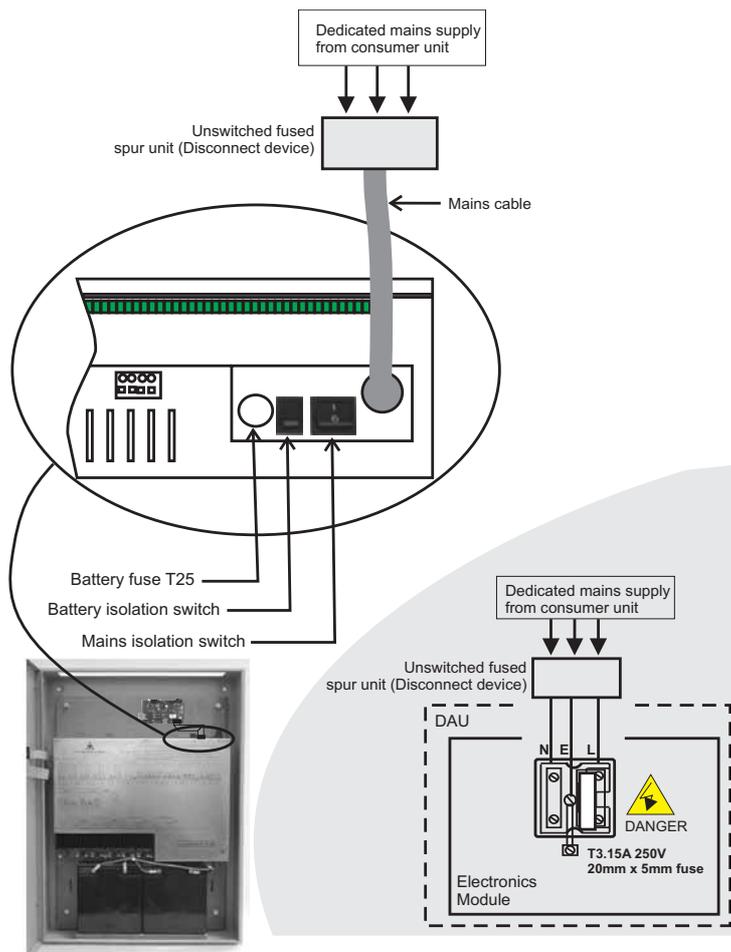


Ensure that the mains supply cable enters the panel through a dedicated cable entry, located adjacent to the mains terminal block and also segregated from loop wiring.



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)**.



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.

DAU Outputs and IDs

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.

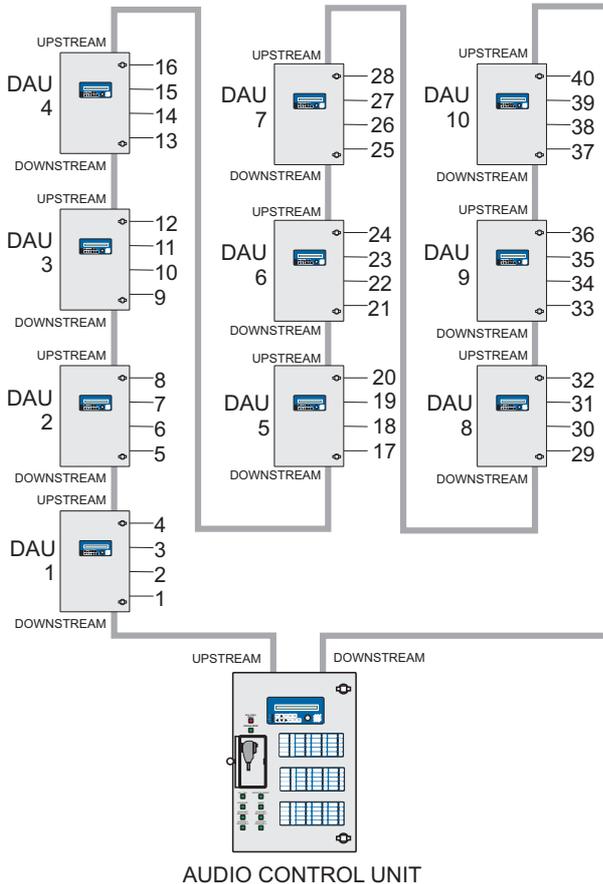
The Audio Control Unit normally 'talks' out of it's UPSTREAM port which is connected to DOWNSTREAM port of the first Vigilon Voice DAU in the chain. The UPSTREAM port of that Vigilon Voice DAU is then connected to the DOWNSTREAM port of the following system until a complete 'ring' is implemented back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

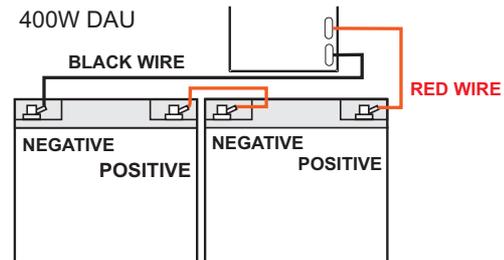
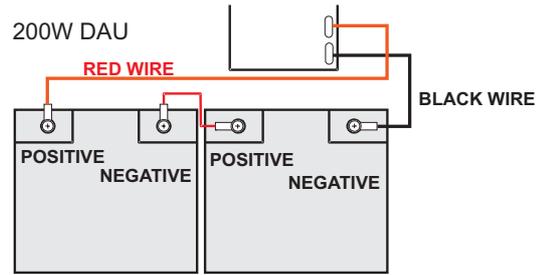
The outputs from the Vigilon Voice DAUs then become a contiguous sequence from the Audio Control Unit point of view.

Unit-ID#1 : outputs 1 to 4

Unit-ID#2 : outputs 5 to 8 Etc.



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.



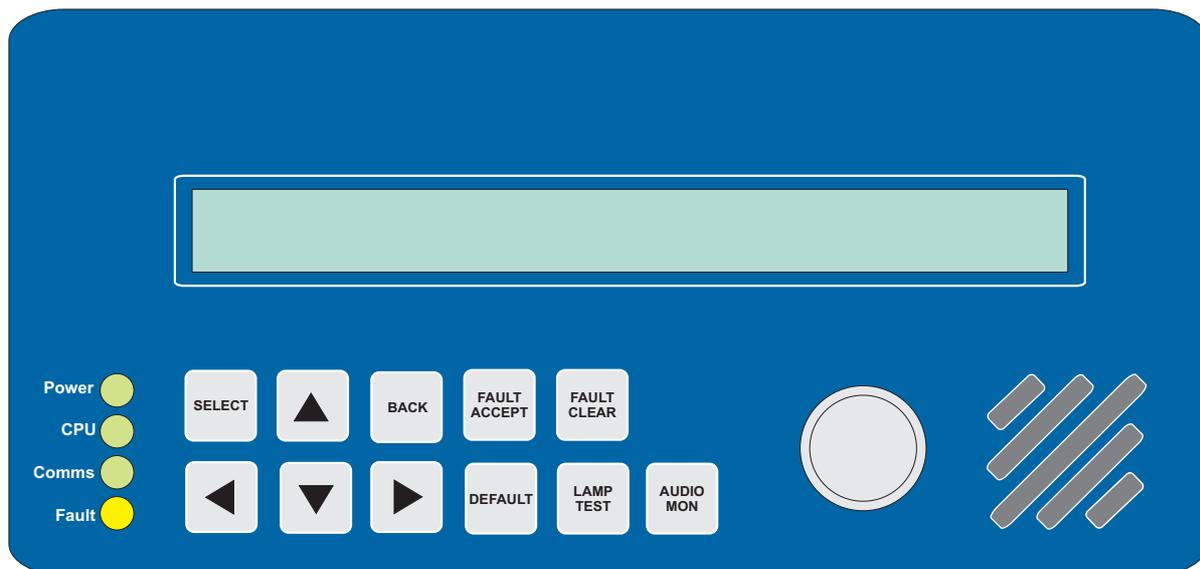
The orientation of the ring terminals of the battery must be as shown in the diagram.

- Re-fit the electronics module cover.
- Reconnect the earth lead from the back box to the electronic module.



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

Control button and indications



<, >	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 <u>both</u> mains and battery.
CPU (Processor) 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

Description of DAU menu functions

DAU Menu reference	Description	DAU Menu reference	Description
1	When logged off, allows entry of user password. When logged on the sub-menu is accessible.	17	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.
2	Log off user – causes saving of configuration data, if modified while the user was logged on.	18	Allows the user to scroll through detected frames. Each entry displays the frame number and the amplifier type and rating for all four slots.
3	Change user password.	19	Allows the user to scroll through detected frames. Each entry displays the frame number and one amplifier type and rating. The remaining amplifier types and ratings are displayed as a separate scrollable list.
4	Clear all configuration data.	20	Causes the DAU to interrogate the audio-CAN bus, and discover what frames and amplifiers are configured.
5	Configuration of input channels.	21	Allows the user to scroll through the list of configured frames. When a frame has been selected, the submenus are displayed.
6	Configuration of output channels. Once the user has selected the specific output channel, submenus are presented.	22	Displays the detected configuration of the frame (type and rating of amplifiers in each of the four amplifier slots).
7	Configuration of contacts and remote I/O units.	23	Enables frame identification text to be entered - for reference only.
8	Miscellaneous router configuration - enables the fault sounder to be suppressed when a emergency microphone is in use.	24	Enables each slot to be associated with an output. This is so that faults can be mapped from amplifiers to zones - specifically in relation to faults displayed by fire panel interface units.
9	Defines the slave node ID. For reference only.	25	Allows the selection of an input channel to be routed to the on-board monitor speaker.
10	Defines the number of input channels connected to the audio loop (range 1 - 3, normally 3). Must match hardware and Audio Control Unit configuration.	26	Allows the user to scroll through the list of amplifiers configured in the selected frame.
11	For each Audio Control Unit DVA, enables a fallback local DVA to be defined which is played if the Audio Control Unit audio source is unavailable for any reason.	27	Allows the user to define a text identity for the amplifier - for reference only.
12	Defines priority for each Audio Control Unit audio source.	28	Defines the type of input surveillance tone to monitor, Low frequency, High frequency or none.
13	Defines the Audio Control Unit name. For reference only.	29	Defines the input and output surveillance tone limits in millivolts.
14	Displays the version numbers of software for Control Processor, DSP and CPLD.		
15	Configures an internal temperature which when exceeded will set a fault.		
16	Clears the history of last 200 faults registered.		

Data, Installation and Operation

DAU Menu reference	Description	DAU Menu reference	Description
30	Defines the maximum interval between surveillance tones (for pulsed operation).	49	Allows the user to scroll through the list of amplifiers configured in the selected frame.
31	Enables DC surveillance to be set on or off and the number of spurs to be set.	50	Displays the type and revision level of amplifier installed in the slot.
32	Enables Earth Leakage reporting to be set on or off.	51	Displays amplifier status in terms of: 1. Whether swapped out or in use. 2. Whether locked out from accessing the standby. 3. Whether in power saving sleep mode 4. Whether in audio monitor mode
33	Allows setting of date and time. The configured time is periodically sent to slave nodes on the network.	52	Displays the monitored level of the surveillance tone detected at the amplifier input.
34	Defines the control node name. For reference only.	53	Displays the monitored level of the surveillance tone detected at the amplifier output.
35	Performs a test of LEDs and 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.	54	Displays the speaker line DC reading, and the number of spurs.
36	Allows the selection of an input channel to be routed to the on-board monitor speaker.	55	Displays the earth leakage reading.
37	Allows the selection of amplifier and slot to be routed to the on-board monitor speaker.	56	Displays active faults on the slave node - user can scroll through faults using up/down keys or the rotary encoder.
38	Allows the user to scroll through configured frame/amplifier combinations (Frame/Slot). When a slot has been selected, the user is given the option to change over (swap in the spare amplifier) or change back (install the working amplifier).	57	As for Faults/Status, but in respect of the fault log (history of last 200 faults) rather than active faults.
39	Allows the user to scroll through the list of configured frames. When one has been selected, the submenus are displayed.	58	As for Faults/Logs/System, but in respect of attached frames. The user selects the frame number, and can then scroll through the fault log maintained by the frame.
40	Displays the dip switch settings on the selected frame.	59	Defines the gain to be applied to the DVA, in respect of any output to which it may be routed.
41	Displays various frame-related measurements.	60	Clear faults. Turns off the sounder, clears the fault LED.
42	Displays raw battery volts.	61	Allows the microphone/line inputs to be configured as one of: Simple fire microphone / zoned fire microphone / paging microphone / single button microphone / network channel / miscellaneous input. Once the input type has been selected for a given input, applicable sub-menus are presented.
43	Displays monitored battery volts.	62	Applicable to zoned fire microphone and paging microphone only.
44	Displays battery volts at charger.		
45	Displays voltage on first supply channel.		
46	Displays voltage on second supply channel.		
47	Displays voltage output by charger.		
48	Displays temperature as monitored by the frame.		

DAU Menu reference	Description	DAU Menu reference	Description
63	<p>Allows each microphone button to be configured as one of:</p> <p>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 node.</p> <p>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.</p> <p>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.</p> <p>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.</p>	67	<p>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.</p>
		68	<p>Defines whether or not this route should cause busy indication on the LEDs associated with microphone zone select buttons</p>
		69	<p>Defines whether, when the route is cleared, it should be cleared immediately or when all DVAs on the route have completed.</p>
		70	<p>Clears down the route associated with the play DVA or DVA routing button.</p>
		71	<p>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 control node or slave node DVA.</p>
		72	<p>Defines the input surveillance tone detection threshold.</p>
		73	<p>Defines relative gain for low frequency band of 3 band equaliser.</p>
		74	<p>Defines relative gain for mid frequency band of 3 band equaliser.</p>
		75	<p>Defines relative gain for high frequency band of 3 band equaliser.</p>
		76	<p>Defines whether or not a high pass filter is to be imposed on the audio input.</p>
		77	<p>Defines time over which this audio channel is faded in/out when audio sources change.</p>
		78	<p>Defines type and level of chime, if any, to be sounded prior to microphone announcement.</p>
		79	<p>Defines a gain to be applied to the input audio, in respect of any output to which it may be routed.</p>
		80	<p>Defines a gain to be applied to the input audio, separately for each output to which it may be routed.</p>
		81	<p>Defines the priority assigned to the input channel.</p>
64	<p>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.</p>		
65	<p>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 DAU. The inputs may be either a control node DVA, or one of the DAU audio sources.</p>		
66	<p>Applicable when a button is configured for DVA routing or play DVA.</p>		

Data, Installation and Operation

DAU Menu reference	Description	DAU Menu reference	Description
82	Defines the classification of announcements made from the input channel (non-emergency, low-level emergency, high-level emergency).	98	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 slave node outputs, the inputs may be either slave node audio sources, or control 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 8 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).
83	Applicable only to inputs configured as Single Button Microphone.		
84	Defines which to which outputs a route is made when PTT button is pressed.		
85	Name of the input - for reference only.		
86	Allows the selection of one of the four available DVA messages. Once the specific DVA has been selected, the following submenus are presented.		
87	Defines the gain to be applied to the DVA, in respect of any output to which it may be routed.		
88	Defines the gain to be applied to the DVA, in respect of any output to which it may be routed.		
89	Defines the priority assigned to the DVA.		
90	Name of the DVA - for reference only.		
91	Defines the classification of the DVA (non-emergency, low-level emergency, high-level emergency).		
92	Gain in dB to be applied to the output.		
93	Enables/disables 8 band equaliser for the output. When enabled, the user can scroll through settings for each band (125Hz, 250Hz, 500Hz, 1KHz, 2KHz, 4KHz, 8KHz, 16KHz).	99	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.
94	Allows the user to configure settings for ambient noise sensor processing: On/off - whether ANS is enabled on the output T-hold - threshold in dB below which ANS correction does not occur. Range - maximum gain in dB applied to compensate for ambient - the rate at which gain is applied to compensate for ambient noise (units 10ms per dB).	100	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.
95	Defines the type and level of surveillance tone imposed on the output. Type can be none, continuous or pulsed. Pulsed is the normal setting.		
96	Gain in dB to be applied to the output in the event that the audio bypass system is used (failure of microprocessor).	101	Defines whether or not this route should cause busy indication on the LEDs associated with microphone zone select buttons.
97	Name of the output - for reference only.		

DAU Menu reference	Description	DAU Menu reference	Description
102	Defines whether, when the route is cleared, it should be cleared immediately or when all DVAs on the route have completed.	107	The user selects the channel (1 to 12), and then defines the use of that channel as one of: 1. Selector - the channel is connected to a 12-way switch, where each switch position can be configured to route a different input to a group of outputs.
103	Clears the route associated with the contact.		2. Volume - the channel is connected to a 12-way switch, where each switch position modifies the volume in respect of a group of outputs, and a group of inputs.
104	Applies when the contact is configured as an external fault. Allows the user to enter text that describes the fault condition.		3. Contact - the channel is used as a contact, either for routing or external fault, as described under "Contacts" above.
105	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 DAUs on the network. The inputs may be either one of the control node audio sources, or a DAU DVA.		4. ANS - the channel is connected to a microphone which is used as an ambient noise sensor. The user associates the channel with one or more outputs where the gain is modified in response to changes in ambient noise.
106	Configures units on the RS485 bus. The user selects a remote unit by multi-drop address, and defines the type as one of: 1. Expand I/O (also known as Remote I/O) unit which 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 in" and "digital in" are displayed when an expand I/O unit is configured. 2. Vigilon Fire loop interface unit, which can interface a total of 16 configurable routing events (usually Alert and Evac DVAs) from the Fire System to each Slave. A scrollable list of the 16 routing trigger events is displayed when a fire panel interface unit is configured. For each alarm, a route is configured as described under "Contacts/Zoning". The Vigilon Fire loop interface has a default address 2.	108	Allows the user to select a contact, and define its use in exactly the same way as described under "Contacts" above.
		109	Each channel may be defined as a busy indicator or as not configured.
		110	The user selects an audio output for which the busy indicator is enabled. The user can then define the input or inputs in respect of which the busy indicator is activated. The inputs in question are the audio sources of the DAU.
		111	When a DAU is networked its fault sounder is automatically suppressed.
		112	Allows the sleep mode to be Suppressed, Enabled and Enabled on batteries, the latter would be normal.

Typical fault messages at a DAU

The fault message list provides information on the fault code that will appear on the displayed 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.



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

DAU 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.
FXX/ * CAN COMMS XX=address of Frame	Failure of CAN Comms to a Frame	Check CAN wiring to frame and status of front panel isolator switches. i.e It is turned off.
FXX/ * CPU RESET XX=address of Frame	CPU Reset	A one of occurrence may be experienced due to EMI or transients. Repeated occurrences indicate faulty electronics.
FXX/ * FAULT 01 XX=address of Frame	Internal Fuse	Check internal fuse F5 on motherboard.
FXX/ * FAULT-09 XX=address of Frame	CPU Memory Fault	Mainframe electronics will need replacing.
FXX/ * FRAME AUX XX=address of Frame	Failure of Frame Auxiliary Output	Check rear panel AUX fuse on mainframe.
FXX/ * FRAME BATT XX=address of Frame	Failure of Battery Supply	Check DC wiring, rear panel DC fuse and front panel isolator switch on specified mainframe.
FXX/ * FRAME TEMP XX=address of Frame	Over Temp Alarm	Check the ambient temperature in the equipment room and investigate amplifier loading and drive conditions.

DAU Fault Code(s) Reported and logged	meaning of the fault code	Suggested Action that can be taken of possible removal of the fault.
FXX/ FRAME MAINS XX=address of Frame	Failure of AC Mains Supply	Check mains wiring, mains fuse in IEC inlet and front panel isolator switch on specified mainframe. If all seems ok, there may be an internal fault with the unit's power supply.
FXX/Y AMP AUDIO INPUT XX=Frame Address Y=Frame Number	Loss of Audio at Input	Check cabling from the router to the input of the amplifier surveillance interface.
FXX/Y AMP FAIL XX=Frame Address Y=Frame Number	Amp Failure	Indicates faulty Amplifier module.
FXX/Y AMP LINE EARTH XX=Frame Address Y=Frame Number	Earth leakage Fault	Indicates an earth leakage path of <500k exists between either conductor of the speaker circuit and ground. Speaker wiring and loudspeakers need to be checked.
FXX/Y AMP LINE OPEN XX=Frame Address Y=Frame Number	DC Line Fault Open	One or more spurs has been lost from the commissioned setting. Speaker wiring and loudspeakers need to be checked Using the tests/status menu it is possible to view the number of spurs remaining to aid pin pointing the fault.
FXX/Y AMP LINE SHORT XX=Frame Address Y=Frame Number	DC Line Fault Short	The dc line resistance has fallen below the commissioned value indicating a full or partial short circuit. Speaker wiring and loudspeakers need to be checked.
FXX/Y AMP TYPE WRONG XX=Frame Address Y=Frame Number	Different Surveillance Interface fitted from that commissioned	Indicates that the Amplifier or Surveillance Interface have been changed to different type from that learnt.
FXX/Y FAULT 09 XX=Frame Address Y=Frame Number	Surveillance Interface CPU Memory	Suspect Surveillance Interface electronics.
FXX/Y SI COMMS FAIL XX=Frame Address Y=Frame Number	Cannot Communicate with Surveillance Interface:	Check whether the Surveillance Interface or its amplifier module has been removed. If all seems ok then the surveillance card electronics should be suspected.
FXX/Y SI CPU RESET XX=Frame Address Y=Frame Number	Surveillance Interface CPU Reset	A one off occurrence may be experienced due to EMI or transients. Repeated occurrences indicate faulty electronics.
INT-01 BAT LOSS	Battery disconnection	Check connections between the battery and the charger unit. Check the general condition of the battery. If at end of life, replace.

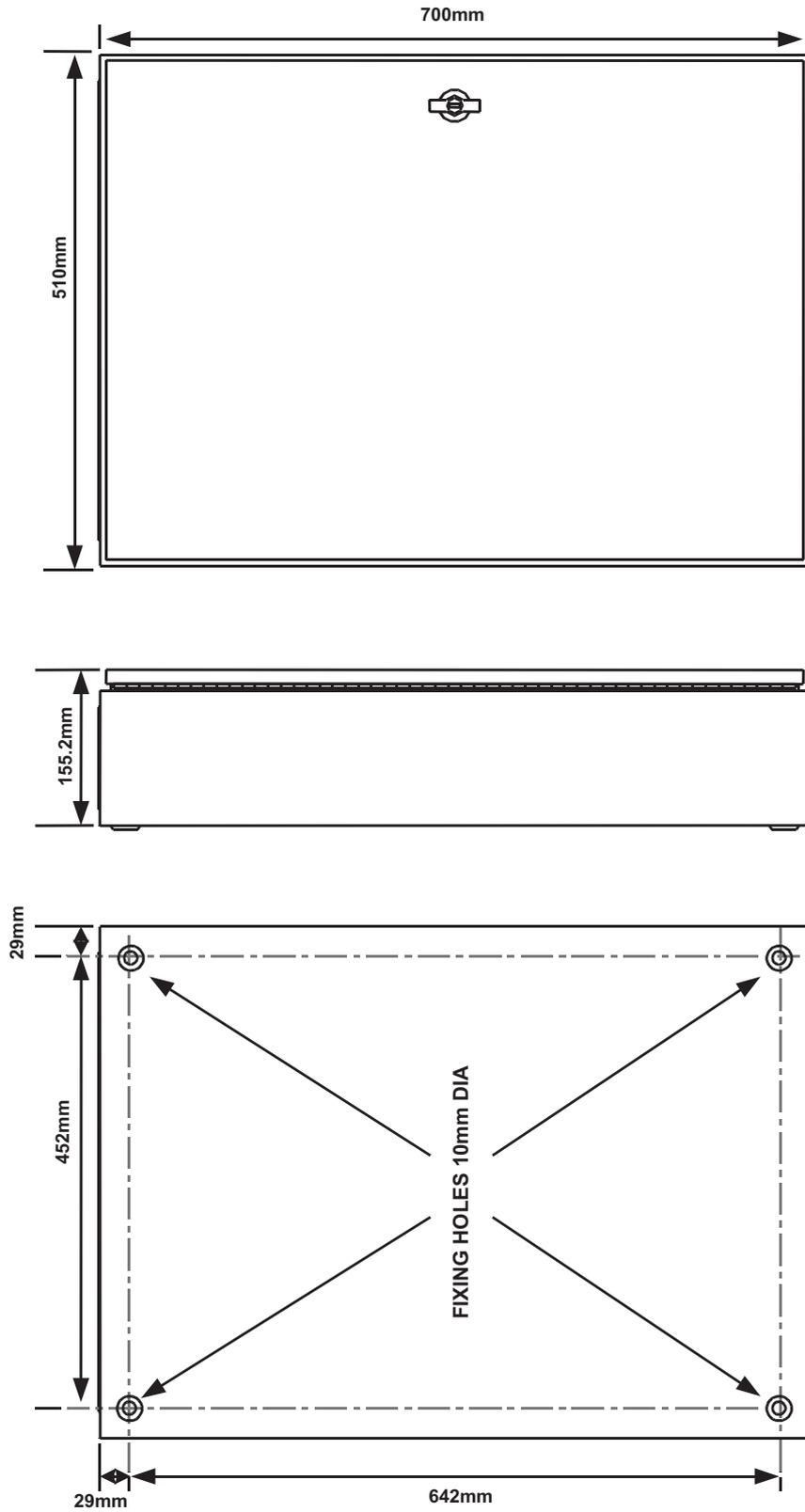
Data, Installation and Operation

DAU Fault Code(s) Reported and logged	meaning of the fault code	Suggested Action that can be taken of possible removal of the fault.
INT-01 CAN COMMS	External CAN bus fault	Check CAN wiring between router and motherboard within the Intellevac. Check whether motherboard cpu and comms LEDs are operating. Probably requires replacement of electronics module.
INT-01 CHARGER FAIL	Charger Fail	Check whether mains supply is reaching unit. If it is o.k, then it is likely that the charger module will need replacing.
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 FRAME SBY FAIL	Standby amplifier failure	Will require the replacement of the amplifier module.
INT-01 NIU FAULT	Communications failure between Intellevac 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 SLAVENODE COMMS	Communications failure with Audio Control Unit	Check connections to network cabling. The Audio Control Unit has several diagnostic features, which help pin-point any failures around the network. If the network seems intact, then the NIU card within the Intellevac may 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.
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.

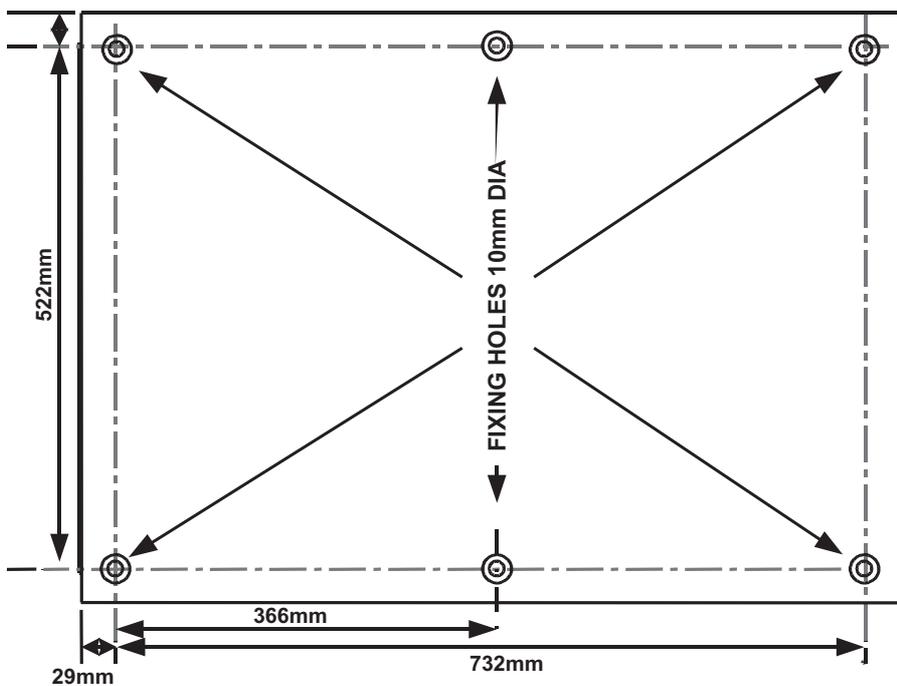
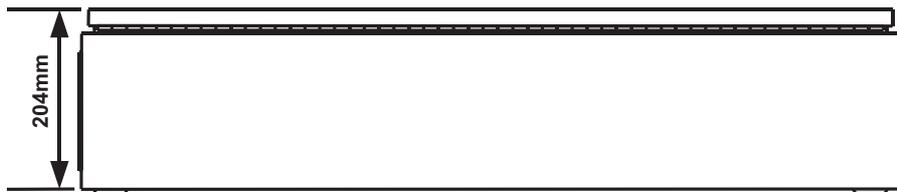
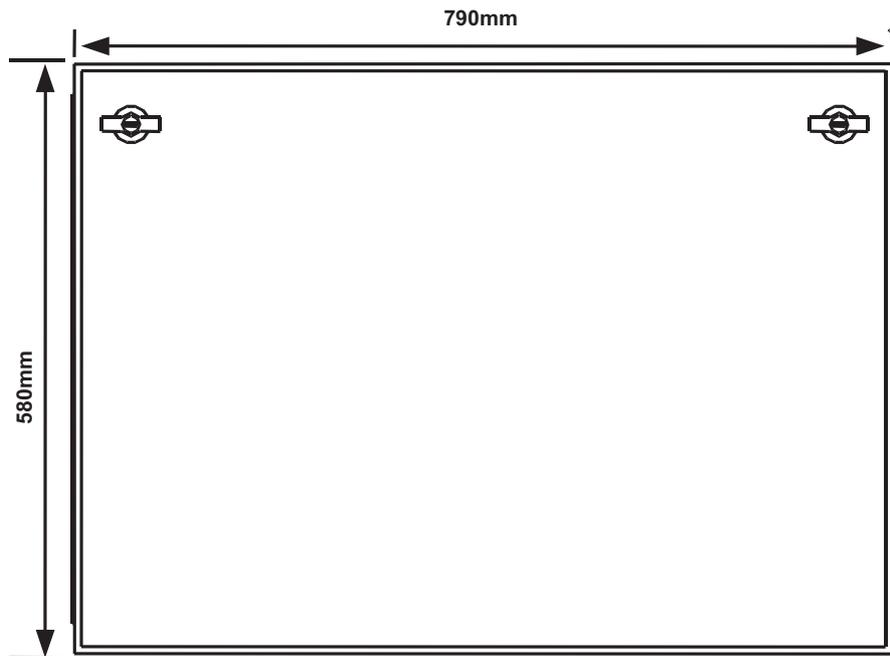
DAU Fault Code(s) Reported and logged	meaning of the fault code	Suggested Action that can be taken of possible removal of the fault.
IP01 SPEAK LED or IP02 SPEAK LED depending on channel	LED Fault SPEAK-NOW	Check wiring between router and SPEAK-NOW LEDs.
MIC<n> FAULT 09 n=01 to (Mic Processor stops)	Mic ROM Error	Microphone electronics will need replacing.
MIC<n> 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.
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 CPU Reset	A one-off occurrence may be experienced due to EMI or transients. Repeated occurrences indicate faulty microphone electronics.
MIC<n> MIC COMMS n=01 to 04	Mic Comms Fault	Check data cabling or power supply cabling between microphone and router.
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 deg C)	The system should be investigated to see how such a high ambient temperature occurred.

Mechanical

200-DAU



400-DAU



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

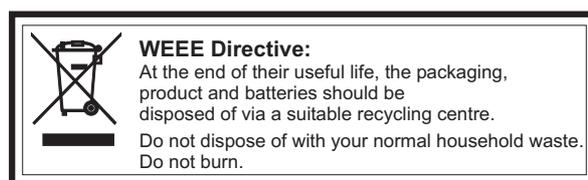
VA-1321	Vigilon Voice 200W Distributed Amplifier unit (includes network interface card and 1 pack of end of line resistors)
VA-1322	Vigilon Voice 400W Distributed Amplifier unit (includes network interface card and 1 pack of end of line resistors)
VA-1361	5-Zone Paging microphone console
VA-1362	10-Zone 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)

Data, Installation and Operation

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	20W High Performance Metal Column Speakers with 4.7uF blocking capacitor
13421-52-DC	40W High Performance Metal Column Speakers with 10uF blocking capacitor
13421-53-DC	80W High 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)



Gent by Honeywell reserves the right to revise this publication from time to time and make changes to the content hereof without obligation to notify any person of such revisions of changes.

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