

# VAR8 Audio Router and System Controller



### DESCRIPTION

The VAR8 and its variants are DSP-based Audio Routers, allowing routing of audio inputs to any combination of outputs. Additionally the VAR8 provides full system control and fault reporting functions for the Application Solutions rack mount Voice Alarm systems. The control functions include the monitoring and control of up to 63 V400 Amplifier Mainframes, and their associated amplifiers, and surveillance interface cards.

The VAR8 includes digital storage for 4 DVA messages, 8 single audio outputs, and 8 universal Mic/Line inputs, each of which can support an ASL Paging Microphone. A ninth audio input is provided for miscellaneous functions such as background music. Inputs 1 & 2 support Fire Microphones, which act as All-Call override in the event of processor failure, as required by BS5839 Pt 8.

The VAR8's built-in fire alarm interfaces include 10 opto-isolated sounder circuit inputs, a RS485 serial port, and a common fault output relay. The base unit VAR8 can include a built-in EF101 European Fire Interface Card, which replaces the base unit's opto-isolated inputs with 8 analogue non-isolated inputs and 8 open collector digital outputs.

With the addition of the EXP8 Interface Expansion Board, an additional 10 opto-isolated inputs are provided. The expanded version is known as VAR8-E.

The base unit VAR8 has a single audio output connection for each channel, which is provided by a RJ45 connector. Separate A&B output connections for driving A&B amplifiers for interleaved speaker circuits, are provided on the EXP8 board by screw-in terminals. Field connection of all other signals is provided by screw-in terminals.

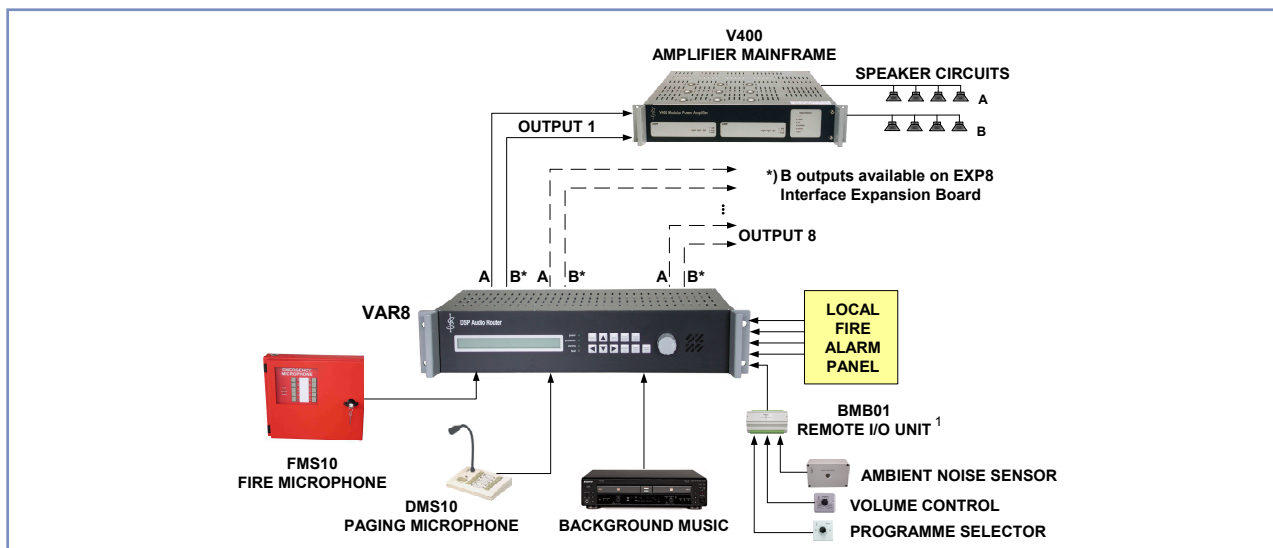
Ambient noise sensing, external volume control, and external programme selection functions are available by connecting the ASL range of ambient noise sensors and remote controls.

Built-in routing and general control inputs enable interfacing to advanced DVA or site control systems, while a serial control port gives the Router the ability to be remotely monitored and configured. The VAR8 also has a front panel display and control interface that provides functions for system commissioning, fault monitoring, and audio monitoring.

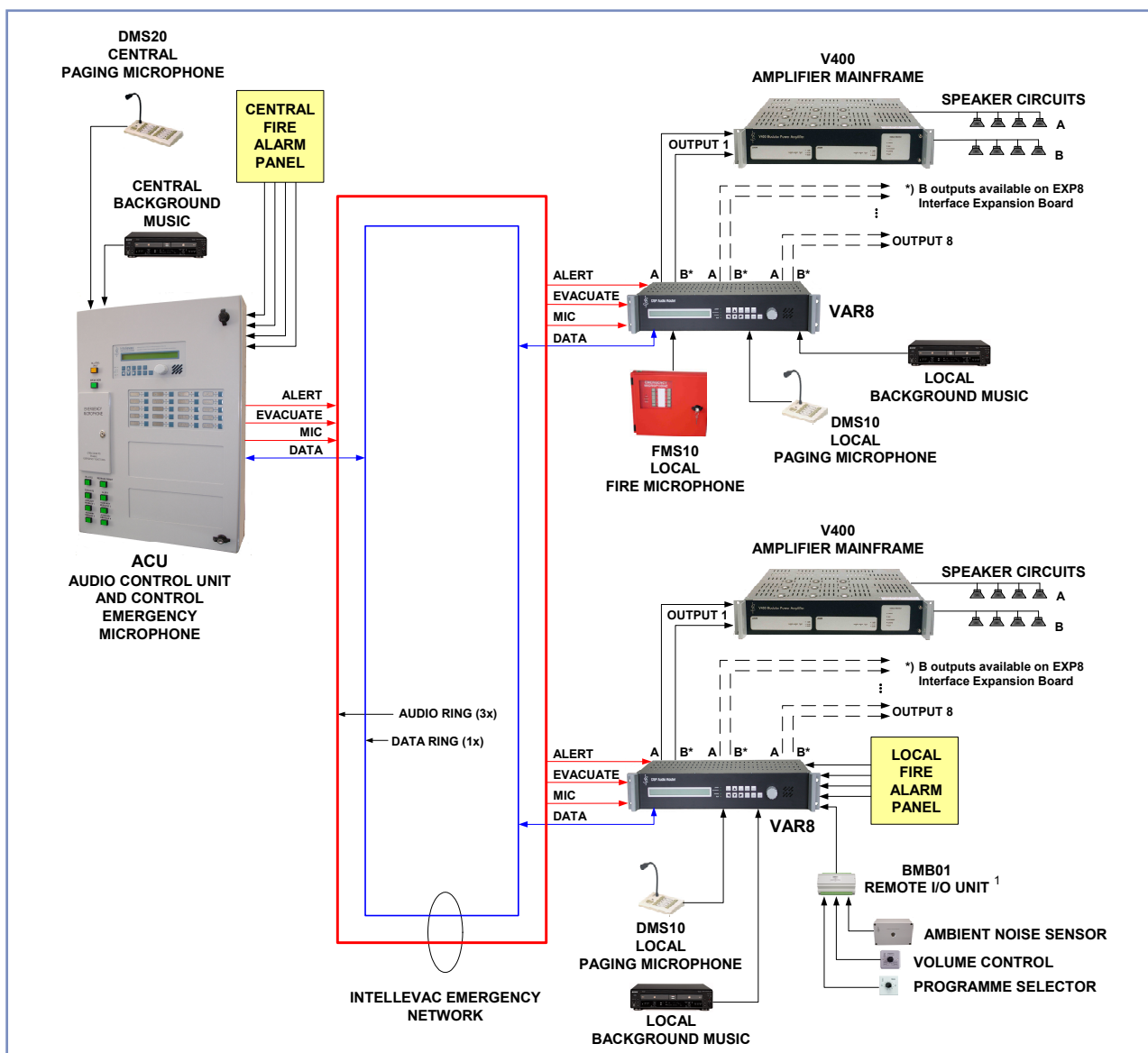
The VAR8 is also available with a built-in ANIC Intellevac Network Interface Card. The Network Interface Card interfaces the VAR8 to an Intellevac Network, allowing the unit to be networked as part of a larger distributed Voice Alarm system, and broadcast of announcements and DVAs initiated from a rack or wall mount Network Audio Control Unit (ACU).

For further details, and for information on other products, please visit [www.asl-electronics.co.uk](http://www.asl-electronics.co.uk).

## APPLICATION DIAGRAM – STAND-ALONE SYSTEM



## APPLICATION DIAGRAM – NETWORKED SYTEM (VAR8 FITTED WITH ANIC INTELLEVAC NETWORK INTERFACE CARD)



<sup>1</sup> Note that the built-in EF101 Interface Card, if fitted, also supports ambient noise sensors, volume controls, and programme selectors.

## SPECIFICATION

### General

Supply Voltage Range .....	18 to 40 V DC
Current Consumption	
470 mA @ 24 V DC supply, backlight off and	
sounder off	
580 mA @ 24 V DC supply, backlight on and	
sounder on	
Auxiliary DC supply	
for external equipment .....	18 to 36 V DC @ 200 mA
Fault Log .....	200 events
Real Time Clock (RTC) .....	Built-in
	(externally synchronisable)
Night Volume Control .....	Daily time controlled
	input / output level control
Format .....	19-inch rack mounting frame
Field Connections .....	RJ45 for single audio outputs
Screw-in terminals for A&B audio outputs on EXP08	
Screw-in terminals for other signals	
Colour .....	Black with silver annotation

### Audio Input

Number of Balanced Audio Inputs .....	8 <sup>2,3,4</sup>
Sensitivity and Impedance .....	-20 dBu (77 mV)
	@ $Z \geq 20 \text{ k}\Omega$
Unbalanced Audio Input .....	Input 9
Sensitivity and Impedance .....	Suits 1-2 V RMS units
	$Z \geq 5 \text{ k}\Omega$
Input Overload Margin .....	40 dB
Input Attenuator Range .....	0 to -63 dB
Equalisation .....	3 band plus LF Cut
Surveillance Tone .....	20 to 30 Hz
	Required Level 0 to -40 dBFS

### Audio Output

Number of Balanced Audio Outputs .....	8 single outputs
Separate A and B output connections	
available on VAR8-E (VAR8 with EXP8 board)	
Level and Impedance .....	0 dBu @ 600 $\Omega$
Graphic Equalisation .....	$\pm 12 \text{ dB}$
at 125, 250, 500, 1 k, 2 k, 4 k, 8 k, 16 kHz	
Surveillance Tone .....	10 dBu to -30 dBu
30 Hz Pulsed Mode = 1 s on 20 s off	
Gain Control Range .....	0 dB to -63 dB

### DVA

Number of Digital Messages	
(DVA) .....	2x50-second messages
	2x66-second messages
DVA Bandwidth .....	100 Hz to 8 kHz

### Audio General

THD Input to Output .....	<0.1 % @1 kHz
Crosstalk .....	>70 dB @1 kHz
Residual Noise .....	<78 dBu (A)
S/N Line .....	>70 dB (A)
Frequency Response	
(Input to Output) .....	100 Hz to 20 kHz, -3 dB

### Audio Monitoring

SPL from Loudspeaker (Sounder Mode) .....	$\geq 50 \text{ dBA}$
@ 1 m from the equipment enclosure	
Frequency Response (From Input through	
to Speaker) .....	200 Hz to 10 kHz -3 dB
Gain Range Control	
(Front panel rotary encoder) .....	0 to -63 dB

### Audio Routing

Number of Concurrent Host Routes .....	20 (max.)
Override per Output .....	40 (max.)

### Control Ports

#### Digital Inputs<sup>5</sup>

Number of Digital Inputs .....	10 on VAR8
	20 on VAR8-E (VAR8 with EXP8 board)
Interface .....	Opto-isolated with built-in resistor
	to suit voltages of +12 to +40 V

#### Analogue Inputs (on VAR8 with EFI01)<sup>4</sup>

Number of Analogue Inputs .....	8
Interface .....	Non-isolated analogue interfaces
	with internal pull-up to +5 V by 4.7 k $\Omega$
Maximum External Fault Active-Low	
Input Voltage Threshold .....	2.5V
Monitored Analogue Contact Thresholds	
Faulty – Open Circuit: .....	>3.7 V
Healthy – Inactive: .....	2.5 V – 3.7 V
Indeterminate: .....	0.8 V – 2.5 V
Healthy – Active: .....	0.2 V – 0.8 V
Faulty – Short Circuit: .....	<0.2 V

#### Digital Outputs (on VAR8 with EFI01)<sup>4</sup>

Number of Digital Outputs .....	8
Interface .....	Open-collector

#### Others

Open Collector Drive	
(SPEAK NOW LED, ALL CALL LED) .....	100 mA
Changeover Fault Relay .....	1
Maximum Global Fault Relay Contact Current Rating:	
500 mA	
RS485 Port .....	1
Up to 6 Remote I/O Units (BMB01)	
and/or Fire Loop Interfaces	
RS232 Port .....	1
For mutually exclusive use by Host PC for configuration,	
Intellevac Network <sup>6</sup> , or PC/DVA system <sup>7</sup>	

<sup>2</sup> Inputs 1 and 2: Hardwire bypass Fire Microphone inputs. Support Fire Microphone, Zoned Fire Microphone, Paging Microphone, Single Button Microphone, or Miscellaneous Input. Support up to 30 microphone buttons.

<sup>3</sup> Inputs 3 to 8: Support Paging Microphone, Single Button Microphone, or Miscellaneous Input. Support up to 20 microphone buttons.

<sup>4</sup> Inputs 1, 3, and 4 Support Network Channel, and are normally used for system networking on VAR8 Routers that are fitted with the ANIC Network Interface Card.

<sup>5</sup> When the VAR8 is fitted with an EFI01, the 10 digital inputs on the VAR8 base unit are replaced by the EFI01 analogue inputs and digital outputs.

<sup>6</sup> The RS232 port is internally used for system networking when the VAR8 is fitted with the ANIC Network Interface Card. It may be temporarily disconnected from the network, and connected to a Host PC for configuration purposes.

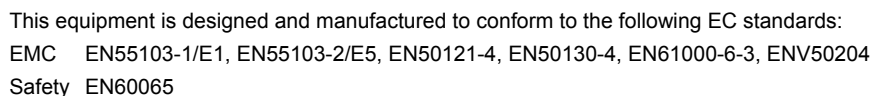
<sup>7</sup> PC/DVA system can only be connected to stand-alone VAR8.

VAR8.....	Base Unit, standard 8x8 Router
VAR8-E .....	VAR8+EXP8 Interface Expansion Board
ANIC .....	Intellevac Network Interface Card
	Factory fit option ordered with VAR8 or VAR8-E
EFI01 .....	European Fire Interface Analogue Input and
	Digital Output Interface Card
	Factory fit option ordered with VAR8 or VAR8-E

Network Audio Channels.....	1, 2 or 3
Standard.....	RS485
Data Rate.....	38.4 kbaud
Distance between Nodes .....	1 km (max.)
Network Control Response Time (Fire Alarm trigger to DVA initiation).....	<1 second
Fault tolerance .....	Any single open or short circuit can be detected and isolated

Dimensions (H x W x D)..... 88 mm x 436 mm x 233 mm  
(excl. connectors and handles)  
Weight.....4.5 kg

Temperature  
(Storage and Operating) ..... -5 °C up to +50 °C  
Humidity Range ..... 0 % to 93 % Non-condensing



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