BALDWIN BOXALL

LEADING THE WAY TO SAFETY

# VIGIL 2

# Voice Evacuation

combined data sheets

# voice evacuation


Research has proven that in an emergency people will react without confusion or panic if they receive a clear, intelligible message. Bells and sounders only give a warning, they do not indicate the nature of the emergency. Phased evacuation using clear, easily understood, pre-recorded, messages ensures that even untrained personnel are evacuated speedily and efficiently.

Voice alarm/evacuation technology has been born from the public address industry and past regrettable disasters most are familiar with.

A voice alarm is, however, not simply a public address system connected to the fire alarm panel, it is much more. A voice alarm system has to work when needed during an emergency and is, therefore, fully monitored at all times. A combination of clear pre-recorded messages and live announcements (to selected areas) enable a controlled and gradual or 'phased' evacuation.

Each voice alarm system is designed and built specifically for each project no two systems are identical. Activated automatically by the fire alarm panel during an emergency, the system will, typically, evacuate areas in immediate danger and alert others.

Used on a daily basis for public address, timed spot announcements for advertising or general information and background music, the voice alarm system is not just for use during emergencies.

A Baldwin Boxall voice evacuation system is renowned for its reliability and quality of build.

## Benefits of voice alarm

- Phased evacuation
- Multi-lingual digital messaging
- Selectable pre-recorded messages
- Microphone priority handling
- Induction loop
- Public information announcements
- Advertisement injection
- Background music for ambience
- Broadcast of opening/closing times

# Router
# BVRD2M

Certified to BSEN54

The BVRD2M DSP-controlled router is well-established and has been installed in many prestigious sites Worldwide.

## VIGIL 2

### FEATURES:

- DSP control.
- Eight electronically balanced inputs. Inputs one and two are configurable with 'all call' processor bypass and are normally reserved for fire microphone(s). All inputs have both independent priority and level settings.
- Up to fifteen priority levels are available. If two concurrent routes are set at the same priority they will be treated on a 'first come first served' basis. Priorities are changeable.
- Three band parametric plus bass and treble equalisation on all inputs (with limiter/compressor), enhancing the intelligibility of the system.
- 'All call' failsafe emergency message generator (twenty second EPROM).
- Seven electronically balanced audio outputs with ten band parametric equalisation and audio delay of up to one second.
- Fully monitored surveillance at either 30Hz or 20kHz (faults are recorded in the history log). All inputs, outputs and DSP messages can be aurally monitored through a loudspeaker on the front panel.
- Built-in realtime clock enables detailed logging and reporting, including detected faults. Indicates time, date, month and year. Also used for night time volume reduction, timed message trigger and to control external inputs. The history log can be accessed via the USB2 port on the front panel.
- Six flash stored (57 second) messages with independent level, surveillance and timing. (For longer, non-critical messages, up to three can be combined.) Settings and messages are changeable (password protected) via the USB2 port.
- Nine selectable chimes / pre-announcement tones of up to eight seconds in length.
- Expandable with BVRD2S (slave router) and CANBUS modules.
- Up to 126 EVAS routers can be networked using fibre or copper to produce a truly sophisticated digital VA network.
- Message synchronisation, even on a decentralised system.
- Ambient noise sensing.
- Amplifier changeover (one in ten).
- Two RS485 ports for networking, microphones, etc.
- Zone grouping and barring on BVRD voice alarm controller.

### HARDWARE FACILITIES:

#### Audio:

- 8 x electronically balanced line -20dB audio inputs (inputs 1 and 2 with processor bypass).
- 'All call' failsafe emergency message generator (20 second EPROM) in the event of DSP failure.
- 7 x electronically balanced 0dBM audio outputs.
- 2 x opto-coupled sounder circuit programmable inputs from the fire detection system.
- 6 x analogue voltage sensing inputs for monitored input access, ambient noise sensors, remote volume controls.
- 3 x contact inputs for unmonitored zone access or PTT.

#### Control Outputs:

- 6 x NPN collector outputs 40V @ 100mA for busy, etc.
- 1 x volt free relay changeover contact for common fault.

#### Serial Ports:

- 2 x RS485 half-duplex ports for communicating to control microphones, fire detection systems, network control, fault reporting.
- 1 x front panel USB2 port to configure the system, fault diagnostics, fault reporting, message download, etc.

# Specifications:

Audio input and output processing using DSP analogue devices ADSP2116 operating at 100MHz.

| AUDIO INPUTS | |
|---|---|
| Input sensitivity | 80mV (-20dB) to 3V (+12dB) |
| Frequency response | -3 dB @ 30Hz and 20kHz |
| Signal to noise ratio | Better than 70dB |
| Phantom power | 12V |
| **Three band parametric equalisation** | |
| Frequency | 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz |
| Bandwidth | 0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct |
| Lift and cut | ± 12dB in 1dB steps |
| **Low filter** | |
| Frequency | 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.2kHz, 1.6kHz, 2kHz, 2.5kHz |
| Slope | 3dB/oct & 6dB/oct |
| Lift and cut | ± 12dB in 1dB steps |
| **High filter** | |
| Frequency | 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz |
| Lift and cut | ± 12dB in 1dB steps |
| **High pass filter** | |
| Frequency | 100Hz, 150Hz, 200Hz, 250Hz, 300Hz |
| Slope | 18dB/oct, 12dB/oct, 6dB/oct |
| **Compressor** | |
| Ratio | 1.4:1, 2:1, 4:1, 8:1 & limiter |
| Attack | 0-99mS |
| Release | 0-999mS |
| **Messages flash PROM** | |
| Storage medium flash PROM (non-volatile) 57 seconds | |
| Frequency response | -3dB @ 50Hz & 18kHz |
| Signal to noise ratio | Better than 65dB |

| AUDIO OUTPUTS | |
|---|---|
| Nominal output level | 0.775V (0dB) |
| Max output level | 1.5V (+6dBM) @ 400 ohms source = 400 ohms |
| Frequency response | -3dB @ 30Hz & 20kHz |
| Output to noise ratio | Better than -85dB |
| **Ten band parametric equalisation** | |
| Frequency | 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz |
| Bandwidth | 0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct |
| Lift and cut | ± 12dB in 1dB steps |
| **Low filter** | |
| Frequency | 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz |
| Slope | 3dB/oct & 6dB/oct |
| Lift and cut | ± 12dB in 1dB steps |
| **High filter** | |
| Frequency | 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz |
| Lift and cut | ± 12dB in 1dB steps |
| **Audio delay** | |
| Selectable from 0 to 1 second | |
| **Front panel** | |
| Monitor speaker to listen to inputs or outputs | |
| Common fault indicator, sounder and fault accept button | |
| LCD display 40x2 characters, backlit, Rotary encoder to ease configuration, setting levels, entering text, etc. | |
| | |
| **POWER** | |
| DC requirements | 22V-35V @ 500mA |

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# Router
# BVRD2M4

Certified to BSEN54

The BVRD2M4 is a four-zone voice alarm router, with the same great features as the BVRD2M, designed for smaller installations and networked decentralised systems.

## VIGIL 2

### FEATURES:

- DSP control.
- Possible to monitor up to four dual (A&B) circuits.
- Four electronically balanced inputs. Input one is configurable with 'all call' processor bypass and is normally used for the fire microphone in voice alarm systems. All inputs have both independent priority and level settings, allowing for dual mode; emergency and normal page.
- Up to fifteen priority levels are available. If two concurrent routes are set at the same priority they will be treated on a 'first come first served' basis. Priorities are changeable.
- Three band parametric plus bass and treble equalisation on all inputs (with limiter/compressor), enhancing the intelligibility of the system.
- Four audio electronically balanced (0dBM) outputs with ten band parametric equalisation and audio delay of up to one second.
- Fully monitored surveillance at either 30Hz or 20kHz (faults are recorded in the history log).
- Built-in realtime clock enables detailed logging and reporting, including detected faults. Indicates time, date, month and year. Also used for night time volume reduction, timed message trigger and to control external inputs. The history log can be accessed via the USB2 port on the front panel.
- Six flash stored (57 second) messages with independent level, surveillance and timing. Settings and messages are changeable (password protected) via the USB2 port.
- Nine selectable chimes / pre-announcement tones of up to eight seconds in length.
- Up to 126 EVAS routers can be networked using fibre or copper to produce a truly sophisticated VA network.
- Message synchronisation, even on a decentralised system.
- Ambient noise sensing (using optional ambient noise sensing microphones).
- Amplifier changeover for up to three zones (using optional relay board, product code BVRD2M4ACO).
- Two RS485 ports for networking, microphones, etc.
- Zone grouping and barring on BVRD voice alarm controller.

### HARDWARE FACILITIES:

#### Audio:

- 4 x electronically balanced line -20dB audio inputs (input 1 with processor bypass).
- 'All call' failsafe emergency evacuate message embedded in main processor in the event of DSP failure.
- 4 x electronically balanced 0dBM audio outputs.
- 4 x opto-coupled sounder circuit programmable inputs from the fire detection system.
- 8 x analogue voltage sensing inputs for monitored input access, ambient noise sensors, remote volume controls.
- 8 x surveillance inputs for monitoring 100V loudspeaker lines (using BEL1 modules).

#### Control Outputs:

- 8 x NPN collector outputs 40V @ 100mA for busy, etc.
- 1 x volt free relay changeover contact for common fault.

#### Serial Ports:

- 2 x RS485 half-duplex ports for communicating to control microphones, fire detection systems, network control, fault reporting.
- 1 x front panel USB2 port to configure the system, fault diagnostics, fault reporting, message download, etc.

VOICE ALARM

PUBLIC ADDRESS

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# Specifications:

Audio input and output processing using DSP analogue devices ADSP2116 operating at 100MHz.

| AUDIO INPUTS | |
|---|---|
| Input sensitivity | 80mV (-20dB) to 3V (+12dB) |
| Frequency response | -3 dB @ 30Hz and 20kHz |
| Signal to noise ratio | Better than 70dB |
| Phantom power | 12V |
| **Three band parametric equalisation** | |
| Frequency | 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz |
| Bandwidth | 0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct |
| Lift and cut | ± 12dB in 1dB steps |
| **Low filter** | |
| Frequency | 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.2kHz, 1.6kHz, 2kHz, 2.5kHz |
| Slope | 3dB/oct & 6dB/oct |
| Lift and cut | ± 12dB in 1dB steps |
| **High filter** | |
| Frequency | 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz |
| Lift and cut | ± 12dB in 1dB steps |
| **High pass filter** | |
| Frequency | 100Hz, 150Hz, 200Hz, 250Hz, 300Hz |
| Slope | 18dB/oct, 12dB/oct, 6dB/oct |
| **Compressor** | |
| Ratio | 1.4:1, 2:1, 4:1, 8:1 & limiter |
| Attack | 0-99mS |
| Release | 0-999mS |
| **Messages flash PROM** | |
| Storage medium flash PROM (non-volatile) 57 seconds | |
| Frequency response | -3dB @ 50Hz & 18kHz |
| Signal to noise ratio | Better than 65dB |

| AUDIO OUTPUTS | |
|---|---|
| Nominal output level | 0.775V (0dB) |
| Max output level | 1.5V (+6dBM) @ 400 ohms source = 400 ohms |
| Frequency response | -3dB @ 30Hz & 20kHz |
| Output to noise ratio | Better than -85dB |
| **Ten band parametric equalisation** | |
| Frequency | 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz |
| Bandwidth | 0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct |
| Lift and cut | ± 12dB in 1dB steps |
| **Low filter** | |
| Frequency | 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz |
| Slope | 3dB/oct & 6dB/oct |
| Lift and cut | ± 12dB in 1dB steps |
| **High filter** | |
| Frequency | 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz |
| Lift and cut | ± 12dB in 1dB steps |
| **Audio delay** | |
| Selectable from 0 to 1 second | |
| **Front panel** | |
| 10 X LED fault indicators | |
| 1 x common fault indicator | |
| Sounder and fault accept button | |
| | |
| **POWER** | |
| DC requirements | 22V-35V @ 500mA |

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# Slave Routers BVRD2S/LT

Certified to BSEN54

VIGIL EVAS slave units enable expansion of the EVAS BVRD2M DSP-controlled router. There are currently two models in the range.

## VIGIL 2

### FEATURES:

- Up to five slave units can be added to each BVRD2M master - enabling a maximum total of 68 inputs, 87 outputs and 30 messages.
- Adding a BVRD2S to a BVRD2M increases the number of inputs available by twelve, the number of outputs by sixteen and adds another twelve messages.
- Adding a BVRD2SLT to a BVRD2M increases the number of inputs available by six, the number of outputs by eight and adds another six messages.
- The slave units mount directly on top of the master unit.
- To minimise rack wiring, the power and communications between master and slave units are through an internal data link.
- All connections are made to the BVRD2S using RJ45 connectors.
- The 'bypass all call enable' switch can be used to prevent an 'all call' message from being broadcast to the selected outputs. This is often used if one of the outputs is being used as a local monitor.
- The BVRD2SLT can be upgraded to a BVRD2S - providing a solution for future system expansion (this is a factory fit upgrade).

### SYSTEM DESIGN:

System design is part of our commitment to provide a complete service from the initial planning stage through installation to after-sales technical support.

Our extensive range of standard products has been designed to accommodate most installation requirements. However our experienced design team often cater for projects that require bespoke solutions.

If you require any assistance with our products, or help with system design, please contact sales@baldwinboxall.co.uk.

### THE VIGIL2 RANGE:

Products in the VIGIL2 range of voice alarm products include:

- BVRD2M DSP-controlled router.
- BVRD2M4 DSP-controlled router.
- BVSMP switch mode power supply.
- BVSMPLT switch mode power supply (half BVSMP).
- BV225, BV125D & BV050Q D-class amplifiers.
- BVRD8, BVRD16, BVRD24, BVRD32, BVRD40, BVRD48, BVRD56 & BVRD64 voice alarm control microphones.
- Unitouch touchscreen paging station.

# Specifications:

| | BVRD2S | BVRD2SLT |
|---|---|---|
| Electronically balanced line audio inputs (-20dB) | 12 | 6 |
| Electronically balanced audio outputs (0dBM) | 16 | 8 |
| Flash stored messages | 12 | 6 |

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# Amplifiers


Certified to BSEN54

Our Vigil2 Class D power amplifiers are proven and robust. They are LPCB certified to BSEN54.

The amplifiers form part of our Vigil2 voice alarm system and their modular style provides great flexibility when designing voice alarm systems.

## VIGIL 2

### FEATURES:

- Designed for quick and simple connection and configuration.
- Class D rated output power is attainable using a 22V battery supply.
- Sleep mode - automatically reducing the standby requirements to 50mA per amplifier when operating on batteries.
- Audio inputs are presented on separate RJ45 connectors; each connector provides a balanced audio input and ground.
- Protected against overload conditions (ie short circuits) by means of a voltage controlled attenuator (VCA); ensuring continual safe operation without creating unnecessary distortion.
- Over temperature protection is also provided. Should the amplifier temperature exceed 90°C the VCA attenuates the input signal to a safe level and illuminates a warning LED. If the system is under surveillance (a requirement of BS5839-8:2008) a fault condition will be indicated due to the gain reduction.
- 24V DC inputs are presented on two-way crimp connected sockets.

### BVMF MAINFRAME:

Three amplifier modules (or two amplifiers and one BVSMP power supply) may be mounted in one BVMF mainframe.

### BV225:

- 225W class D power amplifier with a single 500mV balanced line audio input and 100V line output.
- Can either be used as an independent amplifier module, can be one of two amplifiers wired as an A/B dual circuit using a single input signal or can be paralleled with other BV225 units to enable higher power outputs.
- BV225 units are easily paralleled via RJ45 connectors.

### BV125D:

- Contains two independent 125W class D power amplifiers, each with a single balanced line audio input and 125W 100V line output.
- Can either be used as two independent amplifier modules or two amplifiers wired as an A/B dual circuit using a single input signal.

### BV050Q:

- Contains four independent 50W class D power amplifiers, each with a single balanced line audio input and 50W 100V line output.
- Can either be used as four independent amplifier modules or four amplifiers wired as an A/B dual circuit using a single input signal.
- Channel gain may be individually set using the potentiometers on the board behind the front panel.

# Specifications:

| | BV225 | BV125D (value per amplifier) | BV050Q (value per amplifier) |
|---|---|---|---|
| Rated output power less than 0.2% THD | 225W RMS @ 44.5 ohms | 125W RMS @ 80 ohms | 50W RMS @ 200 ohms |
| Output regulation | better than 1.5dB | better than 2dB | |
| Output voltages obtainable | 50 & 100V | | |
| Frequency response (-3dB) | 35Hz-20kHz | | |
| Input sensitivity and impedance | 500mV @ 40K ohms balanced | | |
| Input common mode rejection ratio | (50Hz-20kHz) Better than 40dB: typically 60dB | | |
| Output noise reference to rated output | Better than 85dB | | Better than 80dB |
| Cross talk between amplifiers @ 1kHz | N/A | Better than 70dB | |
| Supply voltage | 22-35V DC | | |
| **Supply current** | | | |
| Sleep mode 26V (battery supply) | 50mA | | |
| Quiescent 30V (mains supply) | 160mA | | |
| Rated output power | 10A | | |
| **Output stage protection** | | | |
| Thermal | Output stage above 90°C | | |
| Load | Excessive output stage current | | |
| Action | Reduces input to safe level using low distortion VCA | | |
| **Front panel indicators per amplifier** | | | |
| Supply (green) | DC supply connected | | |
| Active (green) | | | Amplifier is active, not in sleep mode |
| Temp alert (yellow) | | | Output stage above 90°C |
| Overload (yellow) | Protection circuit operating | | |
| 100% (yellow) | 100V output voltage | | |
| 10% (green) | 10V output voltage | | |
| **Terminations** | | | |
| Loudspeaker line output | 3-way cage clamp | 2 x 3-way cage clamp | 2 x 6-way cage clamp |
| Balanced line inputs | RJ45 connectors | | |
| DC supply input | 2 pin crimp connectors | | |

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# Power Supplies

Certified to BSEN54


VIGIL2 voice alarm system power supplies employ 'switch mode' techniques to improve efficiency and reduce unwanted heat dissipation and weight.

## VIGIL 2

### FEATURES:

- The BVSMP has two individually protected outputs at 24V; the BVSMPLT has one.
- Each BVSMP will drive either two BV225, two BV125D, or two BV050Q.
- Each BVSMPLT will drive one BV225, one BV125D or one BV050Q.
- Provide independent power converters with current and over-voltage protection circuits.
- Continual monitoring of the charger and all DC outputs ensures reliability.
- Standby batteries are continually 'float charged' by the unit. Ensuring that, in the event of mains failure, power is maintained.
- Built-in deep battery discharge cut off, preventing total discharge that can destroy the standby batteries in the event of AC power failure for long periods.
- A protected output is provided to power a mixer or auxiliary circuits.
- In the event of a fault condition an internal relay releases, providing a changeover contact. A fault will be indicated on the EVAS router.
- The constant voltage charger is set for the recommended float charge. Should the battery fall below this level the BVSMP will charge at a constant rate of three Amps, progressively reducing once the battery has achieved its nominal float level.
- Outputs, together with a volt-free (fault changeover) contact, are provided by a nine-way crimp connector plug and socket.
- Several chargers may be paralleled when used for larger systems. (Paralleled BVSMPs must be synchronised).

### Front panel indicators:

- AC supply healthy.
- Fuse failure.
- Charger failure.
- Battery voltage high.
- Battery voltage low.
- OK.

(lamp test switch for the above indicators).

### BATTERIES:

- We recommend (and supply) high-quality lead acid batteries. They are sealed, valve regulated and maintenance free. As standard our batteries are available rated at between between 35Ah and 150Ah. Larger standby systems can be provided and will be designed and calculated by our engineers. It is important that all voice alarm batteries comply with BS5839 or EN60849. The batteries activate when the mains has failed under emergency conditions.

### MAINS ONLY:

- Switch mode power supplies without battery charging or monitoring facilities:
  - BVSMPM - dual output.
  - BVSMPMLT - single output.

# Specifications:

| | BVSMP | BVSMPSLT | BVSMPM | BVSMPMLT |
|---|---|---|---|---|
| AC supply input voltage | 200V-250V 50-60Hz | | | |
| Maximum power consumption | 700VA | 350VA | 700VA | 350VA |
| Maximum in-rush current @ 230V | 18A | 9A | 18A | 9A |
| DC output 1 to amplifier 1 (peak) | 29-31V @ 12A | | | |
| DC output 2 to amplifier 2 (peak) | 29-31V @ 12A | n/a | 29-31V @ 12A | n/a |
| Imax.a amplifier 1: | 3.5A | 3.5A | n/a | |
| Imax.a amplifier 2: | 3.5A | n/a | | |
| Imin amplifier 1: | 0.1A | 0.1A | n/a | |
| Imin amplifier 2: | 0.1A | n/a | | |
| DC output 3 to auxiliary mixers, etc | 29-31V @ 2A | 29-31V @ 1A | 29-31V @ 2A | 29-31V @ 1A |
| **Battery charger output** | | | | |
| Voltage @ 25°C | 27.12V | | n/a | |
| Temperature compensation | -10mV/C | | n/a | |
| Maximum current | 3A | | n/a | |
| Battery low fault voltage | 21V | | n/a | |
| Battery high resistance fault | 22mOhm | | n/a | |
| Battery deep discharge cut off voltage | 18V | | n/a | |
| Volt-free fault relay output contacts | 100V @ 1A maximum | | n/a | |
| **Fuse protection** | | | | |
| AC supply (5 x 20mm) | 2 x 3.15A(T) | 1 x 3.15A(T) | 2 x 3.15A(T) | 1 x 3.15A(T) |
| Battery (automotive blade) | 2 x 20A | 1 x 20A | n/a | |
| Charger input (self-resettable) | 6A | | n/a | |
| Charger output (self-resettable) | 4A | | n/a | |
| Auxiliary output (self-resettable) | 2 x 1.1A | 1 x 1.1A | 2 x 1.1A | 1 x 1.1A |
| **Front panel indicators** | | | | |
| AC supply | AC supply 'on' | | | |
| OK | No fault | | n/a | |
| Fuse | Fuse fault | | n/a | |
| Charger | Charger fault | | n/a | |
| High | Battery voltage high fault | | n/a | |
| Low | Battery voltage low fault | | n/a | |
| **Terminations** | | | | |
| AC supply input | IEC 6A filtered connector | | | |
| 24V battery input | 3-pin screw terminated connector | | n/a | |
| DC outputs & fault relay contacts | 9-pin crimp terminated connector | | | |

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# Eclipse3

Certified to BSEN54

VIGIL Eclipse3 is a wall-mountable, public address and/or voice alarm system. The unit houses one BVRD2M4 DSP-controlled router, power supply and your choice of amplifiers. Fully networkable, Eclipse3 provides the solution for many applications.

## VIGIL Eclipse3

### FEATURES:

- Stand-alone system, complete with battery backup, in one housing (IP30 rated).
- Up to two amplifiers can be fitted within the unit (the Eclipse3 has four outputs). Choose any combination from the following:
  - BV225 - 225 Watt single amplifier.
  - BV125D - 125 Watt dual amplifier.
  - BV050Q - 50 Watt quad amplifier.
- Up to 126 units can be networked. (Digital networking facilities provided by BVRDNET2M4, factory fit option).
- Ideal for decentralised networking or tenant systems.
- Four electronically balanced inputs:
  - Input one is configurable with 'all call' processor bypass.
  - Independent priority and level settings.
  - Three band parametric plus bass and treble equalisation (with limiter/compressor), enhancing the intelligibility.
- Four audio outputs:
  - Electronically balanced (0dBM) with ten band parametric equalisation and audio delay of up to one second.
- Fully monitored surveillance at either 30Hz or 20kHz.
- Realtime clock enables detailed logging and reporting. The history log can be accessed via the USB2 port on the front panel.
- Up to six flash stored (57 second) messages (four supplied as standard) with independent level, surveillance and timing. Settings and messages are changeable (password protected) via the USB2 port.
- 'All call' failsafe emergency evacuate message embedded in main processor in the event of DSP failure.
- Nine selectable chimes / pre-announcement tones of up to eight seconds in length.
- Message synchronisation, even on a decentralised system.
- Ambient noise sensing (using optional ambient noise sensing microphones).
- Two RS485 ports for networking, microphones, etc.
- Four opto-coupled sounder circuit programmable inputs from the fire detection system.
- Eight surveillance inputs for monitoring 100V loudspeaker lines (using BEL1 modules).

### OPTIONS:

- 'All call' fire microphone on the front panel (BVECASE3FM). This optional red panel features a 'push to call' button and integral microphone.
- Input expander board (BVRD2M4IPE). Enables four microphones to be fitted to a single input. (Maximum of one per Eclipse3 unit.)

### Amplifier option guide:

| AMPLIFIER CHOICE* | PROVIDES THESE OPTIONS |
|---|---|
| 2 x BV225 | • 1 dual 225W circuit/zone.<br>• 2 single 225W circuits/zones.<br>• 1 450W circuit/zone. |
| 2 x BV125D | • 2 dual 125W circuits/zones.<br>• 4 single 125W circuits/zones. |
| 2 x BV050Q | • 4 dual 50W circuits/zones.<br>• 3 dual 50W circuits/zones & 1 reserve. |
| 1 x BV125D + 1 x BV225 | • 1 dual 125W circuit/zone & 1 reserve. |
| 1 x BV050Q + 1 x BV125D | • 2 dual 50W & 1 dual 125W circuit/zone. |
| 1 x BV050Q + 1 x BV225 | • 2 dual 50W circuits/zones & 1 reserve. |

* This is a sample of options available. It is possible to fit just a single amplifier if this is what is required.

VOICE ALARM

PUBLIC ADDRESS

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# Specifications:

Audio input and output processing using DSP analogue devices ADSP2116 operating at 100MHz.

| AUDIO INPUTS | |
|---|---|
| Input sensitivity | 80mV (-20dB) to 3V (+12dB) |
| Frequency response | -3 dB @ 30Hz and 20kHz |
| Signal to noise ratio | Better than 70dB |
| Phantom power | 12V |
| **Three band parametric equalisation** | |
| Frequency | 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz |
| Bandwidth | 0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct |
| Lift and cut | ± 12dB in 1dB steps |
| **Low filter** | |
| Frequency | 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.2kHz, 1.6kHz, 2kHz, 2.5kHz |
| Slope | 3dB/oct & 6dB/oct |
| Lift and cut | ± 12dB in 1dB steps |
| **High filter** | |
| Frequency | 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz |
| Lift and cut | ± 12dB in 1dB steps |
| **High pass filter** | |
| Frequency | 100Hz, 150Hz, 200Hz, 250Hz, 300Hz |
| Slope | 18dB/oct, 12dB/oct, 6dB/oct |
| **Compressor** | |
| Ratio | 1.4:1, 2:1, 4:1, 8:1 & limiter |
| Attack | 0-99mS |
| Release | 0-999mS |
| **Messages flash PROM** | |
| Storage medium flash PROM (non-volatile) 57 seconds | |
| Frequency response | -3dB @ 50Hz & 18kHz |
| Signal to noise ratio | Better than 65dB |

| AUDIO OUTPUTS | |
|---|---|
| Nominal output level | 0.775V (0dB) |
| Max output level | 1.5V (+6dBM) @ 400 ohms source = 400 ohms |
| Frequency response | -3dB @ 30Hz & 20kHz |
| Output to noise ratio | Better than -85dB |
| **Ten band parametric equalisation** | |
| Frequency | 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz |
| Bandwidth | 0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct |
| Lift and cut | ± 12dB in 1dB steps |
| **Low filter** | |
| Frequency | 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz |
| Slope | 3dB/oct & 6dB/oct |
| Lift and cut | ± 12dB in 1dB steps |
| **High filter** | |
| Frequency | 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz |
| Lift and cut | ± 12dB in 1dB steps |
| **Audio delay** | |
| Selectable from 0 to 1 second | |
| **POWER** | |
| 230V AC 700V/A max with full amplifier option | |
| **VIGIL Eclipse3 requires a direct non-switchable power supply. Preferably via a class D circuit breaker.** | |
| | |
| **DIMENSIONS** | |
| 500mm W x 900mm H x 180mm D | |

NB: Amplifiers, power supply, batteries & BELIs need to be ordered separately.

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# Remote Diagnostics

The BVRDIP interface enables a connection from VIGIL systems to an IP network, such as LAN or internet. This allows for remote monitoring of your voice alarm system via internet connected devices.

## VIGIL 2

### FEATURES:

- View the fault status of any connected router on the VIGIL2 voice alarm system.
- Email notification of the occurrence of any new faults anywhere on the system.
- View and download detailed fault logs.
- Compatible with smart phones and tablets.
- Automatic synchronisation of all router real time clocks to internet based time server.
- Built in VIGIL2 network integrity checker.
- RS485 connection to any VIGIL2 router on the voice alarm network.
- Standard Ethernet connection to IP network.
- Built in access control.
- DIN rail mountable module.

### BENEFITS:

- A single BVRDIP unit fitted to the system enables access to all routers on that system - including across networked sites.
- Remotely monitor multiple systems via the internet.
- Early and automatic indication of issues via email.
- Easy diagnostics from a single point of access.
- Simple and intuitive setup via DHCP.
- Can be fitted to any VIGIL2 voice alarm system.

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# DSP Networking

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The BVRDNET provides a digital networking solution for the VIGIL EVAS DSP-controlled voice alarm routers (BVRD2M and BVRD2M4).

VIGIL 2

## FEATURES:

- Connected in a loop configuration
- Minimises cabling requirements.
- Continues to function in the event of cabling damage at a single location.
- The network can be copper, multi mode fibre, single mode fibre or any combination of these.
- Two RS485 and up to fourteen concurrent audio channels.
- Network status indicators.
- Fully monitored.
- Optional system reset feature.
- Up to 126 systems can be digitally networked.

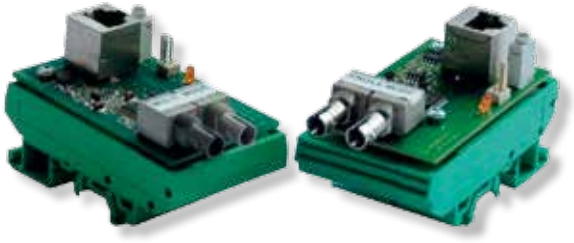
## BVRDNET & BVRDNET2M4:

- The BVRDNET controller is a factory fitted option for the BVRD2M (BVRDNET2M4 for the BVRD2M4).
- Configured from the router's control menu.
- Connector for optional system reset feature (two-pin) header.
- Connector for clockwise network cable (CAT5 patch lead).
- Connector for anti-clockwise network cable (CAT5 patch lead).
- Slow speed option providing six concurrent audio channels with two RS485 channels.
- Fast speed option providing fourteen concurrent audio channels with two RS485 channels.
- Audio bandwidth is 30Hz-20kHz.

## BVRDCIF (copper):

- The BVRDCIF is a DIN rail mounted connection to copper network sections. (Two BVRDCIF required per BVRDNET/2M4).
- CAT5 patch lead connection to BVRDNET/2M4 clockwise or anti-clockwise connector.
- LED to indicate valid data reception.
- Screw terminals for two transmit conductors and two receive conductors (preferably twisted pair).
- Screw terminal for ground.
- Typical maximum distance of 300m at slow speed and 200m at fast speed. (Greater distances possible with some cable types.)

(Please see over for fibre options)



## BVRDFIF (multi mode fibre):

- The BVRDFIF is a DIN rail mounted connection to multimode fibre network sections. (Two BVRDFIF required per BVRDNET/2M4).
- CAT5 patch lead connection to BVRDNET/2M4 clockwise or anti-clockwise connector.
- LED to indicate valid data reception.
- Industry standard ST connectors for fibre termination.
- Screw terminal for ground.
- Supports multimode fibre types OM1 (62.5/125), OM2 (50/125) and OM3 (50/125).
- Typical maximum distances for slow and fast speed connections of 3km (OM1), 2Km (OM2) and 2km (OM3).

## BVRDFIFS (single mode fibre):

- The BVRDFIFS is a DIN rail mounted connection to single mode fibre network sections. (Two BVRDFIFS required per BVRDNET/2M4).
- CAT5 patch lead connection to BVRDNET/2M4 clockwise or anti-clockwise connector.
- LED to indicate valid data reception.
- Industry standard ST connectors for fibre termination.
- Supports single mode fibre types OS1 (9/125) and OS2 (9/125).
- Typical maximum distances for slow and fast speed connections of 4km.

## SYSTEM DESIGN:

- For assistance with system networking and design please contact: sales@baldwinboxall.co.uk.

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# Monitoring DC Line

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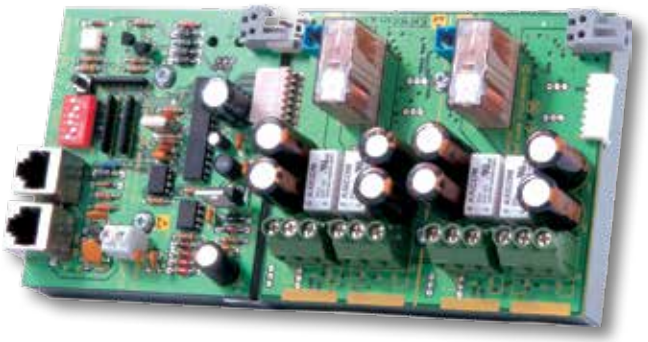


The DC line monitor isolator units are CANBUS modules for the VIGIL2 voice alarm system, consisting of two components: BVRDADIM and BVRDADIS.

## VIGIL 2

### FEATURES:

- Enables dual loudspeaker circuits to connect to a single amplifier.
- Each BVRDADIS unit provides both A&B circuits for two amplifiers.
- Up to 10 spurs per loudspeaker line.
- The BVRDADIM master unit connects to the BVRD2M router.
- Up to five BVRDADIS can be connected to one BVRDADIM.
- Fitting five BVRDADIS enables broadcast and monitoring for up to twenty loudspeaker circuits.
- The modules plug directly together.
- Utilises DC line monitoring techniques, therefore BEL1 end of line monitoring is not required. (Please refer to 'system requirements'.)
- Failure of either the A or B circuit from one amplifier will not effect the other circuit.
- In the event of an amplifier failure, reserve amplifiers will automatically operate.
- With five BVRDADIS fitted, a one-in-ten amplifier changeover ratio is enabled.
- Reduces rack size and cost for large voice alarm systems.
- Earth leakage protection.

### SYSTEM REQUIREMENTS:

- Maximum of 225W load per loudspeaker line.
- Each loudspeaker requires a capacitor (refer to table below). We recommend that you take advice from your loudspeaker supplier.
- Each end-of-line loudspeaker requires a 10K 2W (at 1% tolerance) resistor fitted across the line. (Available in packs of ten - product code BVRDADCR.)

| Speaker Wattage | Capacitor requirement |
|---|---|
| 6 Watts | 1 µf 250V DC |
| 15 Watts | 2.2 µf 250V DC |
| 30 Watts | 4.7 µf 250V DC |
| 60 Watts | 10 µf 250V DC |

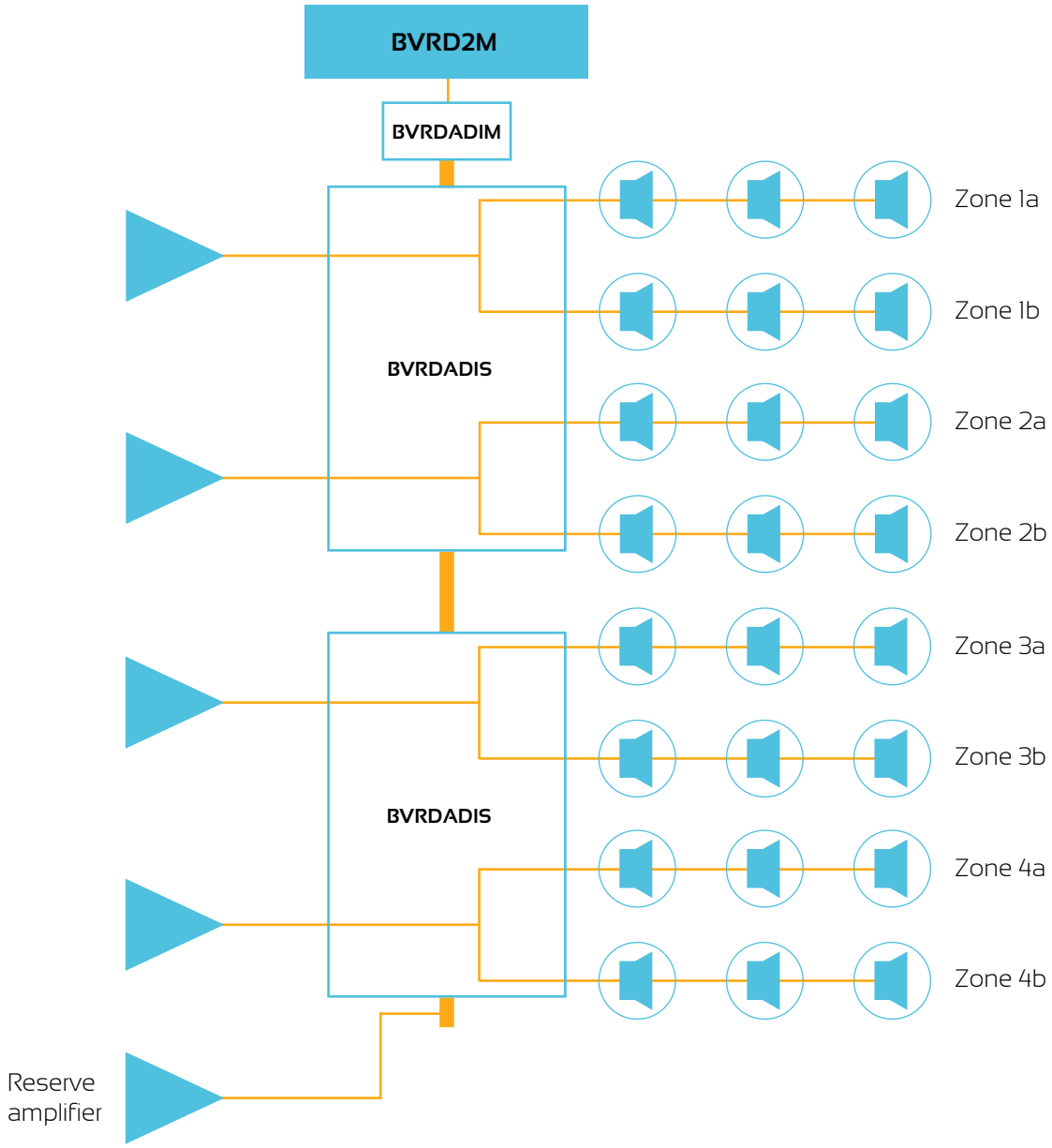
### SYSTEM DESIGN:

System design is part of our commitment to provide a complete service from the initial planning stage through installation to after-sales technical support.

Our extensive range of standard products has been designed to accommodate most installation requirements. However our experienced design team often cater for projects that require bespoke solutions.

If you require any assistance with our products, or help with system design, please contact sales@baldwinboxall.co.uk.

## TYPICAL APPLICATION:

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# Monitoring Options

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All critical signal paths of a voice alarm system must be fully monitored - from the fire officer's microphone, through the amplifiers to the end of the loudspeaker lines. Also, any faults detected with the power supply, internal battery charger and backup batteries must be reported and acted upon. A VIGIL2 system has various monitoring options.

## VIGIL 2

### BEL1 - END OF LINE:

- Two versions are available:
  - BEL1 - standard.
  - BEL1IP - IP65 rated.
- An active unit which is installed on each loudspeaker circuit.
- Up to four BEL1 units can be placed on one speaker run (see diagram over page). All internal DIL switches must be set correctly.
- Monitors the critical signal path of speaker lines for open, short circuit and earth faults.
- Fault warnings are displayed on the voice alarm rack.
- Each BEL1 unit uses approximately three Watts of power. This needs to be noted when designing a system.

### BVRDADC - DC LINE MONITOR:

- DIN rail mounted CANBUS module with screw terminals for connections to amplifiers and loudspeaker lines.
- 11 x amplifier surveillance (10 with automatic amplifier changeover).
- Monitors the integrity of loudspeaker lines by measuring a small DC current. (Each end of line loudspeaker requires a 10K 2W (at 1% tolerance) resistor. Each loudspeaker requires a capacitor - refer to *BVRDADIM/S DC Line Monitor sales leaflet* for details.)
- Monitors for earth faults.
- Fault warnings are displayed on the voice alarm rack.

### BEL10 - END OF LINE:

- DIN rail mounted, the BEL10 is the equivalent of ten BEL1 units.
- Loudspeaker lines terminate at the BEL10.
- Monitors the critical signal path of speaker lines for open, short circuit and earth faults.
- Fault warnings are displayed on the voice alarm rack.
- Typically, the BEL10 is used to ease the upgrading of an existing voice alarm system, where loudspeaker lines are wired in a loop back to the rack.
- Each BEL1 unit uses approximately three Watts of power. This needs to be noted when designing a system.

### BVRDACO & BVRDNCO - AMPLIFIER/LINE MONITOR:

- DIN rail mounted CANBUS module.
- 10 x BEL1 line surveillance with earth leakage fault detection.
- 11 x amplifier surveillance (10 with automatic amplifier changeover - BVRADCO only).
- 1 x RS485 half-duplex port for communicating to control microphones, fire detection systems, network control, fault reporting.
- Fault warnings are displayed on the voice alarm rack.

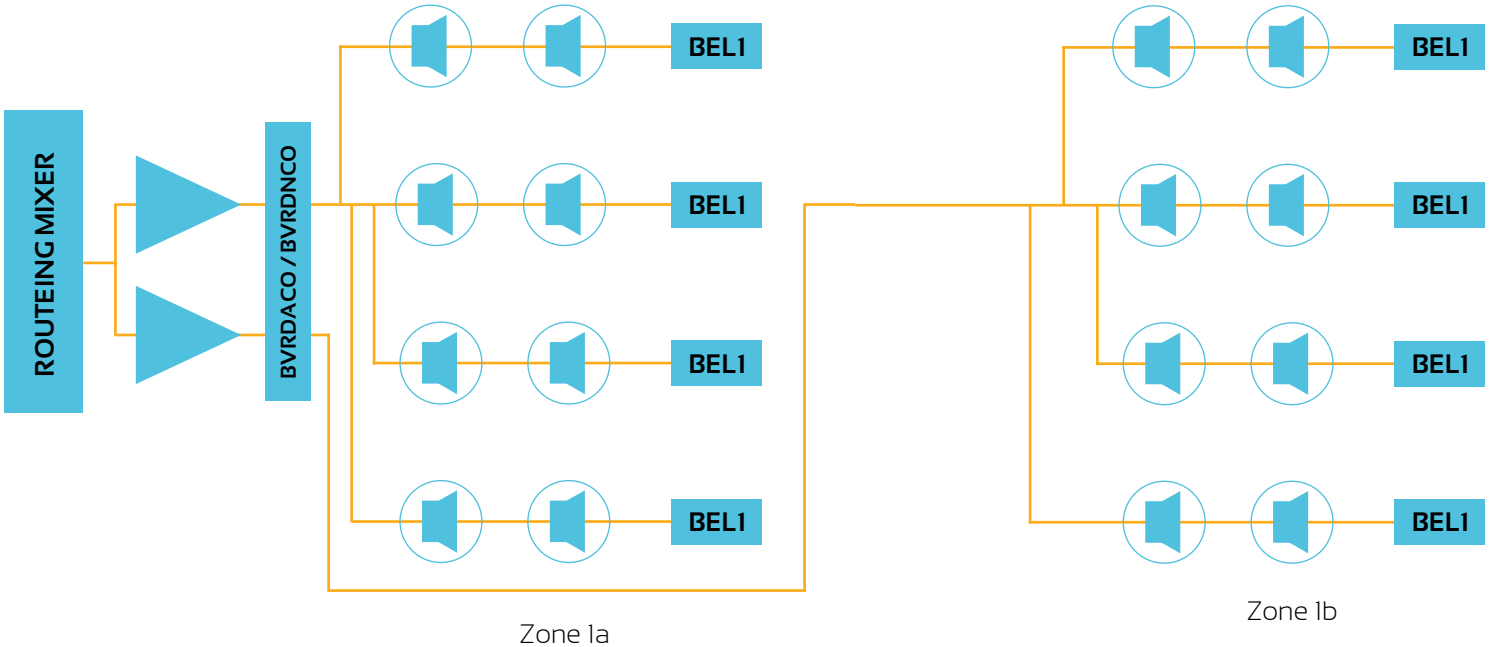
### BVRDADIM & BVRDADIS:

- Enables dual loudspeaker circuits to be connected to a single amplifier. (Refer to *separate leaflet* for full details.)

## BVLAM - IMPEDANCE MONITOR:

- Rack-mountable unit (1U high). Two units can be mounted across one rack 'shelf'.
- Provides eight loudspeaker zone selection from one amplifier.
- On receipt of a signal from an input (ie zone selecting microphone) the BVLAM triggers the amplifier to output to the selected zone.
- An internal relay enables zone switching.
- The BVLAM provides constant impedance monitoring on each of the eight loudspeaker circuits when not selected.
- LEDs are used to indicate a drop (or increase) in impedance - set at either 20% or 40% by DIL switches.
- Access faults on any of the zones from the microphone are indicated by LEDs on the BVLAM.
- Additional LED indicators are provided to show 'system healthy' and 'supply healthy'.

## TYPICAL BEL1 CIRCUIT COMPRISING OF FOUR SPURS:

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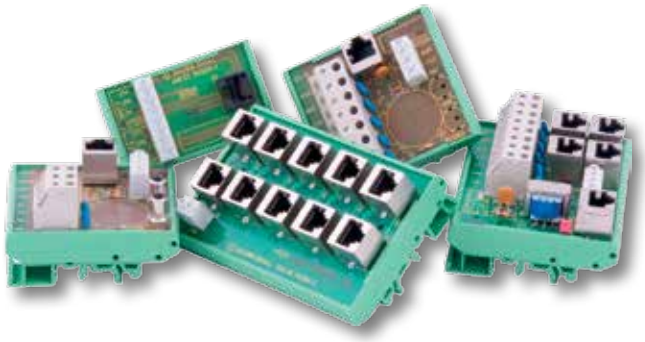
# CANBUS & other Modules



VIGIL EVAS voice evacuation systems provide the solution for many projects, regardless of size, layout or type. The CANBUS modules, which contribute to this flexibility, are listed below.

## VIGIL 2

### BVRDACO:

- Amplifier/line monitor.
- 10 x BEL1 line surveillance with earth leakage fault detection.
- 11 x amplifier surveillance (10 with automatic amplifier changeover).
- 1 x RS485 half-duplex port for communicating to control microphones, fire detection systems, network control, fault reporting.

### BVRDNCO:

- As BVRDACO without auto-changeover.

### BVRDCI:

- 16 x analogue voltage sensing inputs for monitored and unmonitored input access, ambient noise sensors, remote volume controls, etc.
- 4 x volt free changeover relay contacts for busy, etc.
- 8 x NPN open collector outputs 40V @ 100mA.
- 1 x RS485 half-duplex port for communicating to control microphones, fire detection systems, network control, fault reporting.

### BVRDFPI:

- Fire panel interface.
- 24 x opto-coupled inputs from fire detection system.
- 1 x common fault volt-free changeover relay contacts.
- 1 x RS485 half-duplex port for communicating to control microphones, fire detection systems, network control, fault reporting.

### BVRDADC:

- DC line monitor.

### BVRDADIM & BVRDADIS:

- Enables dual loudspeaker circuits to connect to a single amplifier.
- Each BVRDADIS unit provides both A&B circuits for two amplifiers.
- Up to 10 spurs per loudspeaker line.
- The BVRDADIM master unit connects to the BVRD2M router.
- Up to five BVRDADIS can be connected to one BVRDADIM.
- Fitting five BVRDADIS enables broadcast and monitoring for up to twenty loudspeaker circuits. (The modules plug directly together.)
- Utilises DC line monitoring techniques, therefore BEL1 end of line monitoring is not required. (Please refer to 'system requirements'.)
- Failure of either the A or B circuit from one amplifier will not effect the other circuit.
- In the event of an amplifier failure, reserve amplifiers will automatically operate.
- With five BVRDADIS fitted, a one-in-ten amplifier changeover ratio is enabled.
- Earth leakage protection.

### System requirements (BVRDADIM/S):

- Maximum of 225W load per loudspeaker line.
- Each loudspeaker requires a 2.2µf 250V DC capacitor fitted. Please request from your loudspeaker supplier.
- Each end-of-line loudspeaker requires a 10K 2W (at 1% tolerance) resistor fitted across the line. (Supplied free of charge on request.)

## DIF & other DINrail Modules:

DIN rail mounting interface modules. DIF modules typically provide screw terminals for connection to site cables and RJ45 socket(s) for patch cord connection to EVAS router(s).

**BVRDIF1:** Auxiliary/music input interface. 2 x phono inputs and terminals for line input.

**BVRDIF1T:** BVRDIF1 with isolation transformer fitted.

**BVRDIF2:** Microphone input. Terminals for standard microphone input (not data), including busy, access, +24V, etc.

**BVRDIF2NET:** BVRDIF2 for networked racks.

**BVRDIF3:** Data microphone input interface.

**BVRDIF3NET:** BVRDIF3 for networked racks.

**BVRDIF4:** Amplifier input interface. Converts RJ45 to terminals (8).

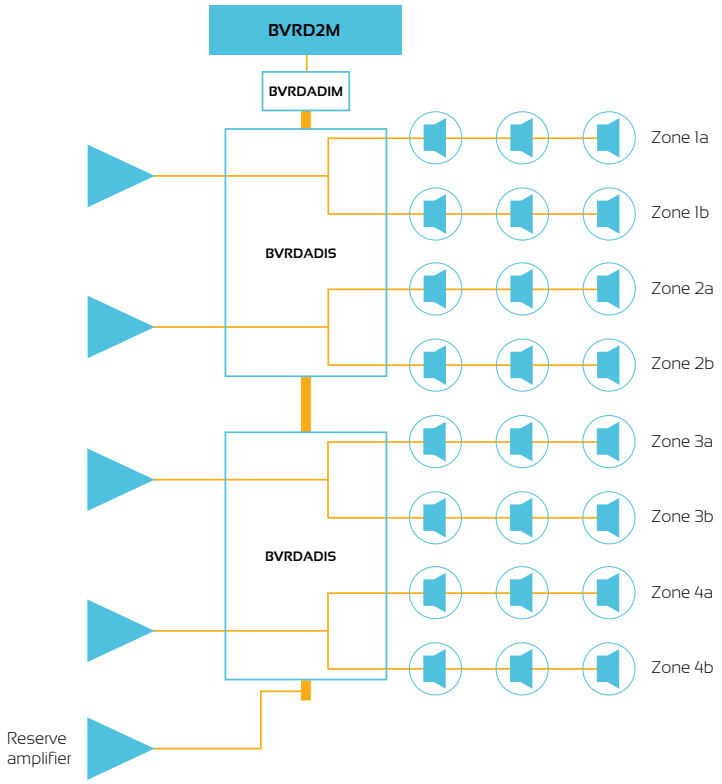
**BVRDIF5:** Microphone sensitivity.

**BVRDIF6:** Screw terminals to RJ45 sockets x 4.

**BVRD2M4IPE:** Input expansion module. Allows up to 4 separate audio inputs to be connected to a single input on a BVRD2M4.

**BVRDP5:** RJ45 five-way patch board. Links data and/or audio racks when adjacent to each other.

## BVRDADIM & BVRDADIS - TYPICAL APPLICATION

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