



# 20W 24Vdc 100V-Line Amplifier

## EVAC20W24V

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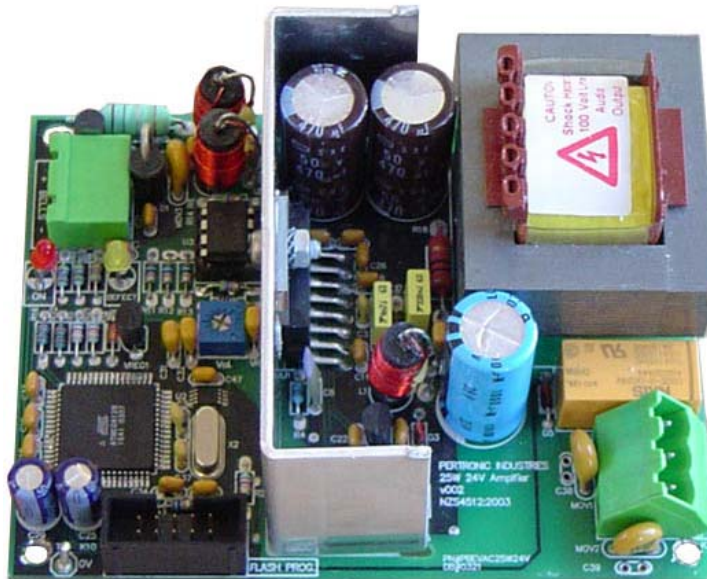


ISO 9001: 2000

International Standards  
 Certifications  
 QAC/R61/0051

### Product Overview:

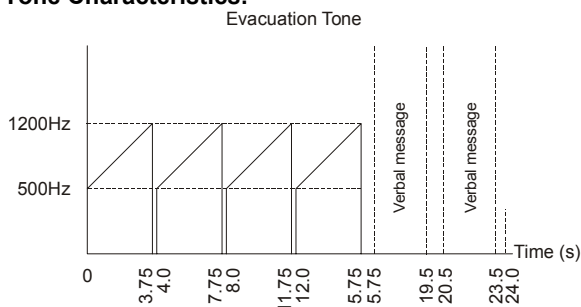
- The EVAC20W24V is one of a range of 100V-Line Amplifiers manufactured by Pertronic Industries.
- Generates the 'Evacuation' tone with verbal messages as specified by NZS4512:2003.
- Designed for connection to the monitored sounder output of an F16e, F100 or F120 Fire Alarm Panel and is activated when the sounder circuit voltage polarity reverses to the 'Alarm' state.
- In the 'Normal' state, the amplifier draws practically no current (less than 0.2µA) and appears transparent to the Fire Alarm panel.
- The 100Vrms line is internally connected to, and monitored by, the panel's Sounder circuit.
- The amplifier's 100Vrms line is short-circuit protected and is capable of driving up to 20W (27.4Vdc supply) into connected PA loud speakers, eg. Pertronic PSS1, PSSB501 and PSSB401.



### Specifications:

- Recommended Panel:** F16e, F100 or F120 Fire Alarm Panels.
- Mechanical:**  
 Board Dimensions: 100mm x 77mm. Height 35mm from bottom of PCB.  
 Mounting Dimensions: 93mm x 69mm - compatible with existing mounting plate
- Electrical:**  
 Operating Voltage: 20-30Vdc, nominal 27.4V  
 Operating Current: 1.2A @ 27.4V nominal with 20Wrms load  
 Power Output: 20Wrms @ 100Vrms line : 27.4Vdc Supply
- Monitoring:** Fully monitored for open or short circuit (10kΩ, 1W EOL resistor)
- Tone:** Evacuation tone and verbal message, compliant to NZS4512:2003

### NZS4512:2003 Tone Characteristics:



### Product Codes:

Description	Code
EVAC Amplifier, 20W 24V	EVAC20W24V
Pert Sounder Speaker 1W Flush - Red	PSS1-R
Pertronic Speaker with B501 Base	PSSB501
Pertronic Speaker with B401 Base	PSSB401

- refer to PSS1 datasheet for other codes  
 - suitable for Analogue detectors only  
 - suitable for Conventional detectors only

**Operation:**

The Amplifier is connected to the Fire Alarm panel sounder circuit output. The Sounder (Bell) terminals '+' and '-' are connected to the corresponding '+' and '-' terminals on the amplifier.

In the 'Normal' state, the panel monitors the 100V line EOL (10kΩ, 1W) resistor by applying an inverted voltage to the amplifier input terminals. In this state the amplifier connects the EOL resistor to the Sounder. A 10kΩ, 1W EOL resistor must be used across the 100Vrms line for correct operation of the amplifier monitoring circuit.

In the 'Alarm' state, the Fire Alarm panel reverses the Sounder voltage causing the amplifier to activate and output a repeating 'Evacuation Tone', followed by a voiced Evacuation Message' onto the 100Vrms loudspeaker circuit. The amplifier is NOT monitored during the 'Alarm' state.

If the amplifier output is overloaded, or the supply voltage becomes 'Off-Normal', the amplifier will signal a defect by turning the Defect/Fault LED ON (refer to Table 1).

ON LED	Fault LED	Defect Description
Off	Off	Amplifier inactive
Steady	Off	Amplifier active
Flashing	Steady	Supply Voltage below 20V or above 30V
Steady	Flashing	Amplifier output is overloaded

**Table 1. LED Decoding**

The 100Vrms Line may have a maximum of three spurs. For these configurations an EOL resistor of the appropriate value must be installed at the end of each spur (refer to Table 2).

Number of Spurs	EOL Resistor Value for Each Spur
1	1 x 10kΩ, 1W
2	1 x 22kΩ, 1W on each spur
3	1 x 33kΩ, 1W on each spur

**Table 2. Spurs**

Capacitively-coupled 100Vrms PA Speakers must be used with the 20W, 24V Amplifier. The capacitor must be bipolar and able to withstand 250V peak line voltage. The value should be approximately 1µF per watt of power for each speaker.

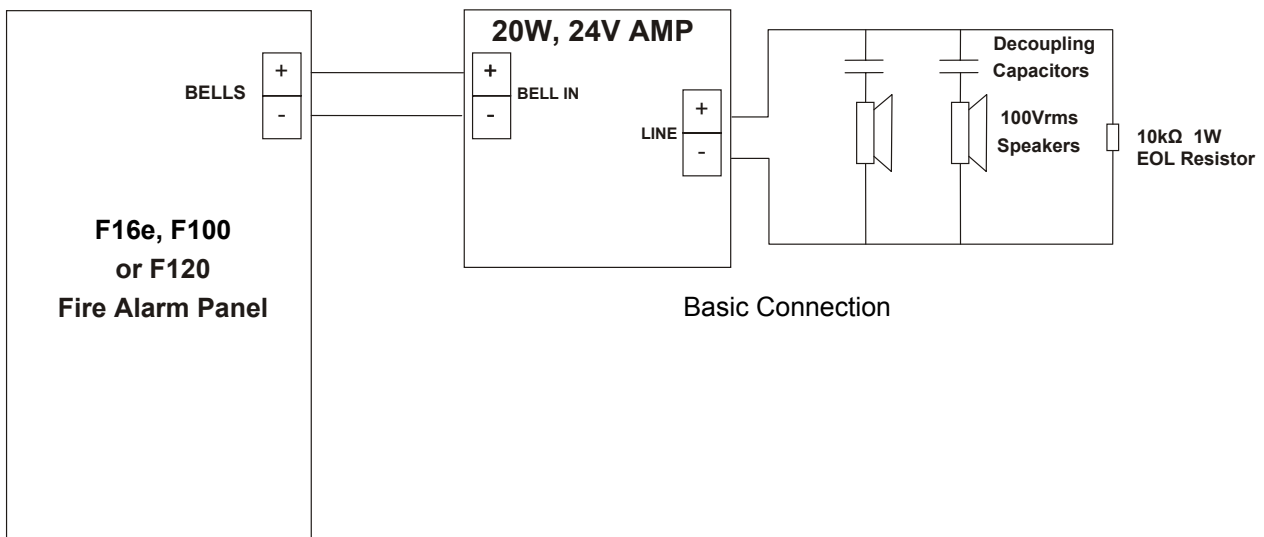
The 100Vrms speaker wiring must be separated from ELV (Extra Low Voltage) wiring to prevent interference from cross-talk.

Loading of the 100Vrms line must not exceed 20W.

An excessive load will cause the Amplifier to current limit and shutdown. The symptoms for this may be interruptions in the audio output and two or more amplifiers broadcasting out of synchronization.

Loading of the Bell output must not exceed the maximum fuse or relay ratings

**Connection Diagram:**



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