



# 20W 12Vdc 100V-Line Amplifier

## EVAC20W12V

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ISO 9001: 2000

International Standards  
Certifications  
QAC/R61/0051

### Product Overview:

- The **EVAC20W12V** 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.
- Can be directly mounted into the Pertronic F1 or F4 Conventional Fire Alarm panels, but can be used with any 12V Fire Alarm system.
- 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 (13.7Vdc supply) into connected PA loud speakers, eg. Pertronic PSS1 and PSSB401.



### Specifications:

#### Recommended Panel:

F1 or F4 Conventional Panels.

#### Mechanical:

Board Dimensions: (L x D x H mm) 97 x 74 x 35 - height from bottom of PCB.  
Mounting Dimensions: (L x D mm) 83mm x 57mm - compatible with existing mounting plate

#### Electrical:

Operating Voltage: 10.5-14Vdc, nominal 13.7V  
Operating Current: 2.0A @ 13V nominal with 20Wrms load  
Power Output: 20Wrms @ 100V line : 13.7Vdc Supply  
15Wrms @ 100V line : 10.5Vdc Supply

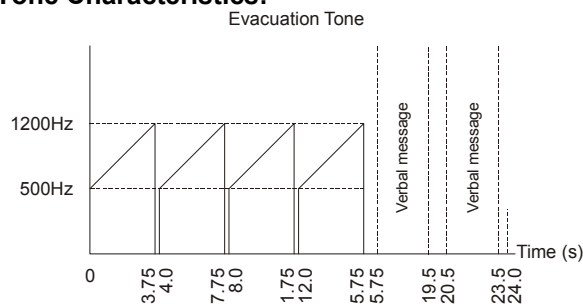
#### Monitoring:

Fully monitored for open and 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 12V	EVAC20W12V
Pert Sounder Speaker 1W Flush - Red	PSS1-R
Pert Sounder Speaker 1W Flush - White	PSS1-W
Pertronic Speaker with B401 Base	PSSB401

- refer to PSS1 datasheet for other codes

- 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 panel Sounder (Bell) output. 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 10V or above 15V
Steady	Flashing	Amplifier output is overloaded

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 Amplifier. The capacitor must be bipolar and able to withstand 250V peak line voltage. The value should be approximately 1uF 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.

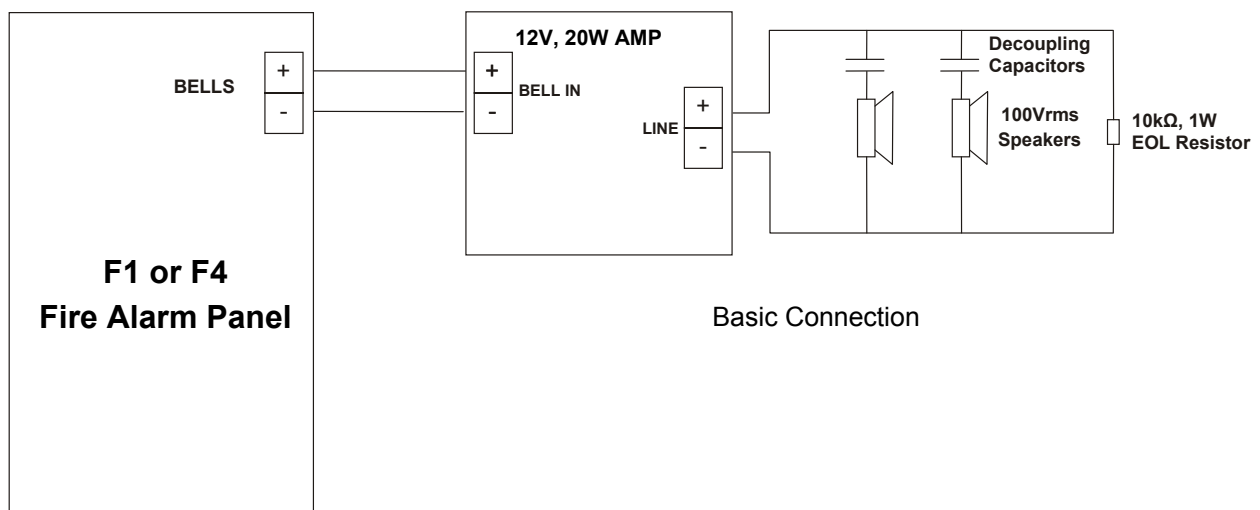
Loading of the Bell output must not exceed the maximum fuse or relay ratings.

F1 Panel Bell Circuit: Fuse 1 = 3A

F4 Panel Bell Circuit: Fuse 1 = 5A

12V, 20W Amplifier Line Relay maximum contact current = 3A

## Connection Diagram:



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