

# REDBACK® A 2067 Line Monitoring Unit



The A 2067 is a line monitoring unit or LMU. An LMU monitors the condition of 100V PA speaker lines and alerts you if there is a problem with the wiring. The A 2067 comes standard with five separate zones that have individual LEDs to indicate the condition of the Line. The A 2067 can be expanded up to 10 zones when the A 2068 (5 zone card) is installed.

## Features

- Up to 10 zones monitored (with A 2068 installed)
- LED's to indicate condition of the Line
- Loud alert sound if there is a fault
- Separate rear outputs for the condition LED's (via DB26 Socket)

## Fitting the A 2068 5 Zone Card

First remove the lid by way of the 6 screws on the top. Then remove the front panel there are 3 screws on the bottom / front. Watch for the wire connecting the switch in the front panel to the pcb. **DO NOT** disconnect these wires. Once the lid and front panel have been removed install the A 2068 on the four plastic standoffs already in the chassis. Make sure you remove the plugable terminal blocks on the rear of the A 2068 before installation otherwise it will not fit. Connect the spare 16 Way IDC plug into the A 2068 (Refer to additional instructions inside case). Screw the front panel then the lid back into place. The A 2067 LMU is now ready to be installed.

## Installing the A 2067 LMU

The A 2067 can be powered by a 16VAC plugpack or 24VDC. Terminals on the rear are supplied for both.

Hook up the 100V PA amplifier/s to the inputs on the rear. All the inputs are isolated from each other so up to 5 amplifiers (10 if A 2068 fitted) can be used or any

combination below that number e.g. one amplifier connected to 2 or more inputs. **NEVER** connect 2 or more amplifiers to one zone it will cause major damage to the A 2067 and the amplifiers.

The output terminals can now be connected to the speaker lines. A maximum of 100 Watts of load per zone is allowed. Any more than this will damage the A 2067. Any number of 100V line transformer / speaker combinations can be used as long as the total load for each zone is below 100 Watts.

Setting up the speaker runs so they work with the A 2067 is as easy as installing a 22uf BP capacitor at the input of each transformer / speaker (please see figure 3). Install an end of line resistor or EOL at the very end of the wiring run before the final transformer / speaker. The end of line resistor must be 100K Ohm in value and at least .25 Watt or above. Unused outputs from the A 2067 need to have a EOL resistor installed across positive and negative terminals. If these are not installed the A 2067 will bring up a fault condition for the non EOL terminated zones.

## Powering up the A 2067

When the A 2067 is powered up the unit will emit three loud beeps to indicate that the unit has turned on. The A 2067 then pauses for about 10 seconds to allow the protected zones to be checked for the condition they are in.

The unit will then beep once to indicate that it has checked the zones. If there is a fault the A 2067 will alert you with a loud pulsing beep. A short on a zone is indicated on the front panel by a red LED. An open condition on a zone will be indicated on the front panel by a yellow LED. If there are no faults detected, all zones will indicate good condition with a green LED.

If the A 2067 goes into alert mode and the beeping is heard it can be stopped by pushing the CANCEL button. The fault LED indicators will remain on until the fault on the zone is corrected. Any new fault conditions will result in the alert tone sounding again.

From then on no matter how many times the cancel button is pushed the A 2067 will go into alert mode any time there is a new fault condition on any of the zones. The alert will not sound again if a zone goes from a fault (open or short) condition to good condition.

## Fault Finding

*The A 2067 does not power up:* Check that power is applied to the unit either by a 16VAC plugpack or an external 24VDC source.

*Unit continues to go into alert mode and emits a loud continuous beep:* Push the cancel button and check the LED display. See which zone is causing the problem (if all zones are showing "good" the buzzer will not sound continuously).

*The SHORT LED is coming up on a zone:* First check and see if you have installed the 100K EOL resistor at the end of the line and the 22uf BP capacitors on each of the transformer / speakers that are installed on that line (see diagram). If they are all installed there must be a short across the line, once removed the A 2067 will go into GOOD.

*The OPEN LED is coming up on a zone:* First check and see if you have installed the 100K EOL Resistor at the end of the line and the 22uf BP Capacitors on each of the transformer / speakers that are installed on that line (see diagram). If they are all installed there must be a break in the line, once this is removed the A 2067 will go into GOOD.

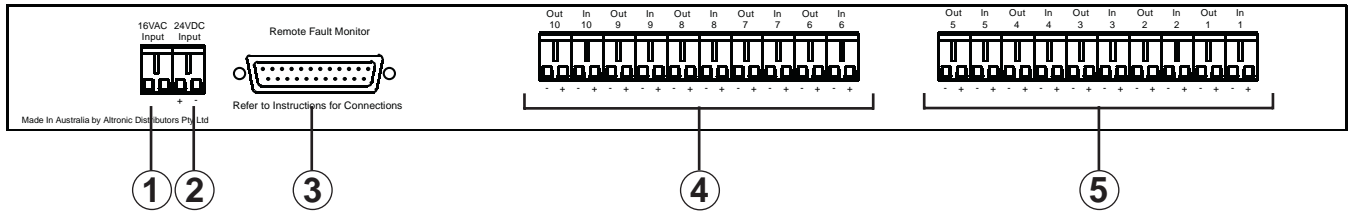
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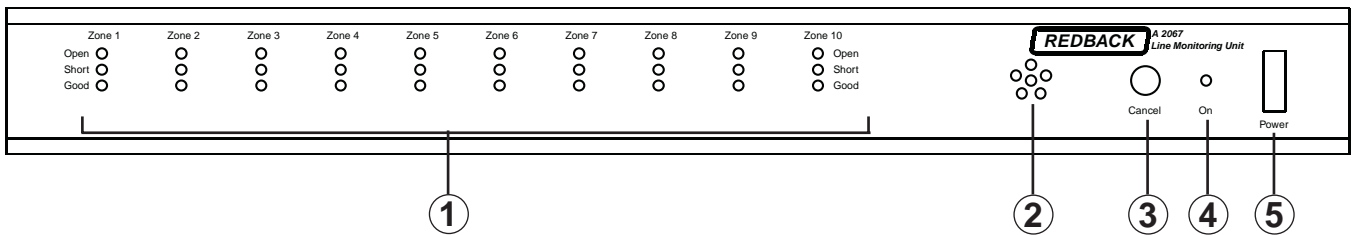
Figure 1: A 2067 rear panel



**Fig 1. Rear Panel Legend**

- |   |              |   |                               |
|---|--------------|---|-------------------------------|
| 1 | 16V AC Input | 3 | Remote fault connector (DB25) |
| 2 | 24V DC Input | 4 | Card 2 (Zones 6 - 10)         |
|   |              | 5 | Card 1 (Zones 1 - 5)          |

Figure 2: A 2067 front panel

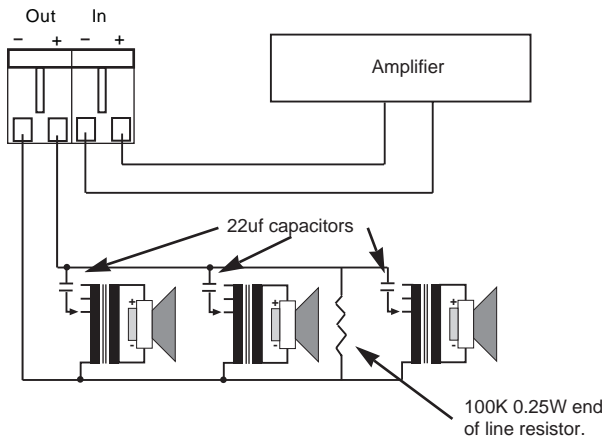


**Fig 2. Front Panel Legend**

- |   |                      |   |               |
|---|----------------------|---|---------------|
| 1 | Zone Indicators 1-10 | 3 | Cancel Button |
| 2 | Piezo Buzzer         | 4 | Power Led     |
|   |                      | 5 | Power Switch  |

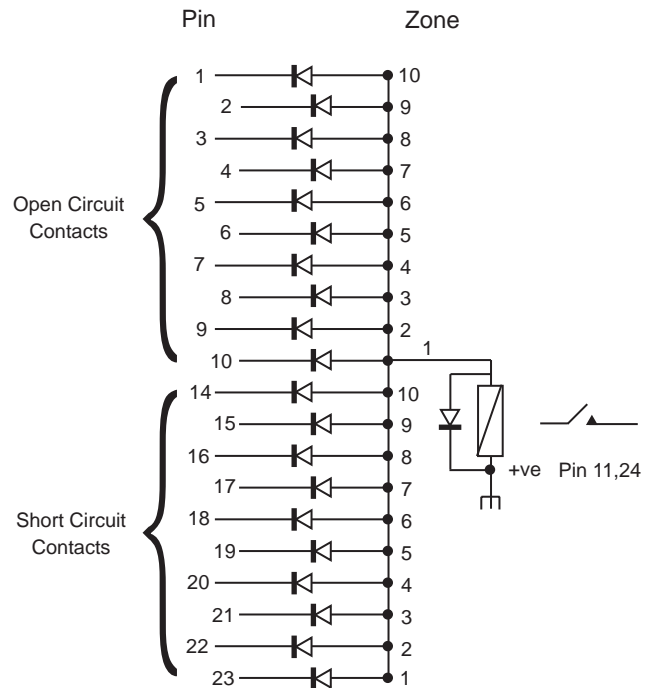
**Fig. 3 Connection Details**

Max Load, 100W per zone. Unused zones must have 100k 0.25W end of line resistor installed. Max wire run, 200m.



**Fig. 4 Common Fault Detection**

If required the unit can be set up to trigger a relay contact whenever ANY zone fault occurs eg. Whenever any zone from 1-10 becomes OPEN or SHORT. Further problem diagnosis can then be determined from the front panel as required.



Pins 12, 13 and 25 are ground

## Remote Fault Monitoring

A DB25 connector is provided to remote monitor line conditions. These pins when in "good" condition are 12V. Once a circuit becomes "open" or "short" the voltage switches to 0V or ground

Pin Number	Function	Pin Number	Function
1	Open Zone 10	13	Ground
2	Open Zone 9	14	Short Zone 10
3	Open Zone 8	15	Short Zone 9
4	Open Zone 7	16	Short Zone 8
5	Open Zone 6	17	Short Zone 7
6	Open Zone 5	18	Short Zone 6
7	Open Zone 4	19	Short Zone 5
8	Open Zone 3	20	Short Zone 4
9	Open Zone 2	21	Short Zone 3
10	Open Zone 1	22	Short Zone 2
11	+12V	23	Short Zone 1
12	Ground	24	+12V
		25	Ground