



Operating Manual

A 4022 30 WATT PUBLIC ADDRESS AMPLIFIER

Distributed by Altronic Distributors Pty. Ltd.

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IMPORTANT NOTE:

Please read these instructions carefully from front to back prior to installation. They include important setup instructions. Failure to follow these instructions may prevent the unit from working as designed.

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REDBACK is a registered trademark of Altronic Distributors Pty Ltd

You may be surprised to learn that Altronics is still manufacturing hundreds of product lines right here in Australia. We have resisted the move offshore by offering our customers better quality products with innovations to save them time and money.

Our Balcatta production facility manufactures/assembles:

Redback public address products
One-shot speaker & grill combinations
Zip-Rack 19 inch rack frame products

We strive to support local suppliers wherever possible in our supply chain, helping to support Australia's manufacturing industry.

Redback Audio Products

100% developed, designed & assembled in Australia.

Since 1976 we have been manufacturing Redback amplifiers in Perth, Western Australia. With over 40 years experience in the commercial audio industry, we offer consultants, installers and end users reliable products of high build quality with local product support. We believe there is significant added value for customers when purchasing an Australian made Redback amplifier or PA product.

Local support & feedback.

Our best product features come as a direct result of feedback from our customers, and when you call us, you speak to a real person - no recorded messages, call centres or automated push button options.

It's not only the assembly team at Altronics who are employed as a direct result of your purchase, but hundreds more at local companies used in the supply chain.

Industry leading 10 year warranty.

There's a reason we have the industry leading DECADE warranty. It's because of a long tried and tested history of bullet-proof reliability. We've heard PA contractors tell us they still see the original Redford amplifier still in service in schools.

We offer this comprehensive parts & labour warranty on almost every Australian Made Redback public address product. This offers both installers and end users peace of mind that they will receive prompt local servicing in the rare event of any problems.

OVERVIEW

The amplifier features one balanced microphone and two line level (RCA) inputs. VOX muting is included which mutes input 2 when the input 1 microphone or line input is activated. The A 4022 conservatively delivers 30W RMS power with a frequency response extending from $\approx 50\text{Hz}$ to $10\text{kHz} \pm 3\text{dB}$ at a total harmonic distortion (THD) of less than 0.5% @ 1kHz. Bass and treble controls and VOX sensitivity are all adjustable. Phantom power (15V DC) is available on the input 1 XLR input and the input sensitivities of AUX 1 and AUX 2 inputs can be set between 100mV and 1V. The amplifier operates from 240V AC mains and the output comes standard suitable for a 100V line load. Fuses on both AC and the output speaker line provide excellent fault condition protection and robust performance.

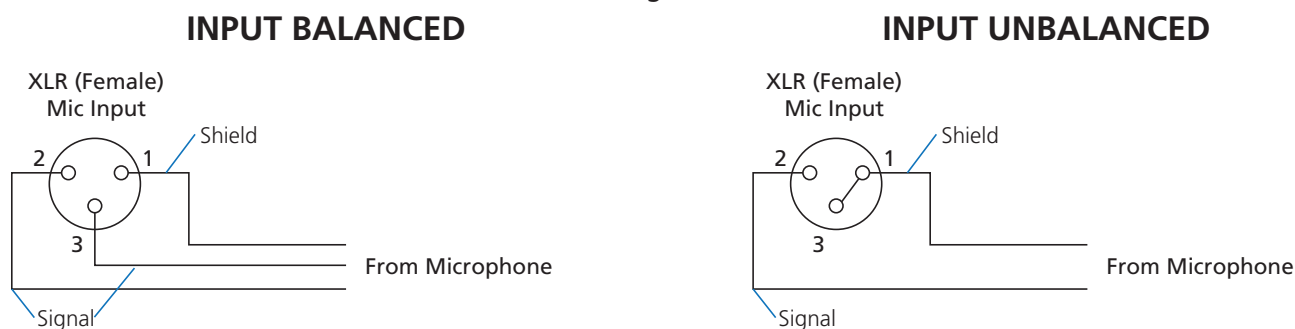
FEATURES

- 1 Balanced microphone input
- 2 Line inputs
- VOX muting on input 1
- Phantom Powering (15V DC) available on XLR input
- Adjustable VOX and input level sensitivity
- Bass and Treble controls
- Full 30W RMS output (100V)
- 100V output
- Very Low noise and distortion
- 240V AC operation

INPUT CONNECTIONS

The microphone input can be connected via a balanced XLR 3 pin socket. Refer to figure 1. The line inputs are connected via standard RCA sockets

Fig 1



Pin 1: Earth, Pin 2: Signal In Phase (hot), Pin 3: Signal Out of Phase (cold)

SPEAKER CONNECTIONS

Speakers fitted with 100V line transformers may be connected to the output terminals on the rear of the amplifier. Always ensure the total load of the fitted speakers does not exceed the rated output of the amplifier (ie 30 watts for the A 4022 amplifier) otherwise damage may result. When fitting speakers with line transformers the impedance of the load cannot be measured using a standard multimeter. An impedance meter such as Altronics Q 2007 is required. Fig 2 lists the impedance at certain loads of speakers fitted with 70V and 100V line transformers. So for a total load of 30 watts using 100V line transformer fitted speakers, the impedance of the speaker load should be 333Ω.

i About 70V & 100V Line Speaker Systems

Wiring speakers in parallel for 70/100V line: Where several speakers are to be used at one time, on one circuit, it becomes necessary to use speakers fitted with line-matching transformers. This is to overcome the effects of connecting speakers in parallel and cable losses. The amplifier generally has an output voltage of 100 volts (70 volts is typically used in North America, however operation is similar). In this configuration the total wattage load on the amplifier is derived from adding all the line transformer primary tap ratings together. For example, 70 one watt speakers will have a total speaker load of 70 watts. Or alternatively, it is conceivable to connect 100 one watt speakers to a 100 watt, 100 volt line amplifier.

Measuring 70/100V Line Speaker Impedance: To measure amplifier system load, you must use an impedance meter in order to measure the ac resistance of the connected speaker network. Impedance cannot be measured with a standard multimeter, as this measures the dc resistance. Use the Altronics Q 2004 or similar impedance meter.

Load	70V	100V
0.5W	9.4kΩ	20kΩ
0.66W	7.12kΩ	15kΩ
1W	4.7kΩ	10kΩ
1.25W	3.76kΩ	8kΩ
2W	2.35kΩ	5kΩ
2.5W	1.88kΩ	4kΩ
3W	1.56kΩ	3.3kΩ
5W	940Ω	2kΩ
7.5W	626Ω	1.3kΩ
10W	470Ω	1kΩ
15W	313Ω	666Ω
20W	235Ω	500Ω
30W	156Ω	333Ω
40W	117Ω	250Ω
60W	78Ω	166Ω
100W	47Ω	100Ω
125W	37Ω	80Ω
250W	19Ω	40Ω
500W	9.4Ω	20Ω

Fig 2

VOX MUTING

Redback® A 4022 30W PA Amplifier

VOX muting is provided on input one, which, when activated, automatically mutes input 2. VOX can be selected ON or OFF via DIP switch 3. This is factory set in the OFF position. VOX sensitivity is adjusted via the trimpot on the front of the unit.

PHANTOM POWER

Phantom power is provided on the mic input XLR connector. This is selected ON or OFF via DIP switch 4. When in the ON position 15V DC is supplied to a connected microphone.

INPUT SENSITIVITY

The input sensitivities of AUX 1 and AUX 2 inputs can be set to either 100mV (OFF) or 1V (ON) via DIP switches 1 and 2.

OPERATION

Once all inputs and the output is connected:

- 1) Turn the bass and treble controls to midway.
- 2) Turn the volume controls to zero.
- 3) Turn the power switch on. The power indicator should illuminate.
- 4) Turn on microphone or auxiliary input source and adjust appropriate volume control to desired level.

Note: Both the mic and auxiliary for input 1 are mixed together. Both the mic and auxiliary input can be run together but note there is only the one volume control for both of these.

TROUBLESHOOTING

No Power, No Lights

Make sure amplifier power switch is on. Make sure mains power switch is on at the wall. Check the mains fuse. Replace with only the correct type and rating (800mA M205). Over rated fuses will invalidate warranty.

Distorted Output

Check that the speaker type is correct for the output that you are using (ie. 100V line). Check for any short circuits on the speaker line.

Very Low Output Volume

Make sure that the input is the correct level (check for shorted connectors). Check for any short circuits on the speaker line.

Continually Blows Fuses

Make sure that the speaker line is not shorted. Check speaker types, ratings and if on correct output.

Amplifier Keeps on Cutting In & Out

Make sure that there is adequate ventilation around the amplifier. Check the vent slots on the front, top and sides are not covered or blocked and the fan on the rear is functioning correctly. Check also speaker types, ratings and for any short circuits on the speaker line.

SPECIFICATIONS

POWER OUTPUTS

Power: A 4022 - 30 Watts RMS
Distortion: < 0.5%, @ 1kHz
Output line: 100V

FREQUENCY RESPONSE

Mic input : 52Hz - 10kHz, ±3dB
Line inputs: 40Hz - 10kHz, ±3dB

INPUT SENSITIVITY

Mic inputs: 2.6mV balanced
Line inputs: 150mV

SIGNAL

All volume controls min, typically 72dB below rated output.
All inputs display same S/N ratio

LINE OUTPUT 600Ω balanced, 0dB , 3 Pin XLR

OUTPUT CONNECTORS

Speakers: Screw terminals

INPUT CONNECTORS

Mic Input: 3 pin XLR balanced
Line inputs: RCA stereo socket, bridged mono
240V AC power: IEC power connector

MUTING: VOX muting (input 2)

CONTROLS

Mic/Line inputs: Volume
Power: On/off switch
Indicators: Power
Bass: ±10dB @ 100Hz
Treble: ±13dB @ 10kHz

POWER SUPPLY: 240V AC

FUSE PROTECTION: 800mA AC
..... 3A x 2 (DC internal)

DIMENSIONS ≈300W x 220D x 74H

* Specifications subject to change without notice