

## INTERNATIONAL LIMITED WARRANTY

ARX Systems (ARX) warrants to the first purchaser of any ARX equipment that it is free from defects in materials and workmanship under normal use and service. ARX's sole obligation under this warranty shall be to provide, without charge, parts and labour necessary to remedy defects, if any, which appear within twelve (12) months from date of purchase, and for a further twelve (12) months supply parts only.

This is our only warranty. It does not cover finish or appearance items, or burned voice coils, if the equipment has been, in ARX's sole judgement:

- Subjected to misuse, abuse, negligence or accident;
- Repaired, worked on, or altered by persons not authorized by ARX;
- Connected, installed, adjusted or used for a purpose other than that for which it was designed. This includes damage caused by connection to the wrong AC voltage, and running speaker systems (a) without the appropriate ISC processor (b) with a non ARX crossover, or (c) with the ISC disconnected or bypassed.

This warranty gives you and us specific legal rights and there may also be other rights and considerations which can apply.

### **Warranty Service Procedure**

Should it become necessary to have your equipment serviced under the terms of the warranty, please follow these steps:

1. Call your Distributor for Return Authorisation, freight details and Return address
2. **Carefully** repack the unit, in its original packaging where possible. If not, use **plenty** of packing material - better to be safe than sorry.
3. Include a note with a description of the problem
4. Include a copy of the receipt/invoice showing date of purchase.
5. Don't forget to write your name and address clearly, and include a phone number where you can be contacted during normal business hours. Make it easy for the service technicians to contact you if they have a question.
6. Attach all these to the actual unit itself.
7. We strongly recommend you insure the package. We can't fix it if it gets lost! Send it prepaid by UPS, Fedex, DHL or a similar parcel service that can track the package. Parcel post is not recommended! *If Warranty Registration Card is missing, please contact ARX, stating model, and where & when purchased.*

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# ZA 5•1

## Surround Sound Power Amplifier

## OWNER'S MANUAL



ARX Systems Pty Ltd, PO Box 15,  
Moorabbin, Victoria 3189, Australia  
**Phone:** (03) 9555 7859 **Fax:** (03) 9555 6747  
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**On the Web:** [www.arx.com.au](http://www.arx.com.au)  
**Email:** [info@arx.com.au](mailto:info@arx.com.au)



**IMPORTANT** - This amplifier is designed to be connected **ONLY** to the AC voltage ticked  below



**100 V AC, 50 - 60 Hz**

*It is essential that you check that this voltage is correct for your area before connecting it to AC power. Do not plug power cable into AC power until voltage has been checked. If incorrect, contact your ARX distributor.*



**120 V AC, 50 - 60 Hz**

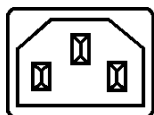


**220-240 V AC, 50 - 60 Hz**

*Your warranty does not cover connecting the amplifier to the wrong voltage AC power!*



**240 V AC, 50 - 60 Hz**



This model has a removable AC power lead that connects to an IEC connector (See Picture at Left)

#### WARNING SYMBOLS USED ON THIS EQUIPMENT



This symbol is intended to alert you to the presence of important operating instructions contained in this owner's manual



This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



This symbol indicates that a Slow Blow fuse is used in this equipment. Replace with same type and value only



**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN



TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER OR BACK OF UNIT  
NO USER-SERVICEABLE PARTS INSIDE  
REFER SERVICING TO QUALIFIED PERSONNEL

#### WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

#### ATTENTION

RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR



Complies with 89/336/EEC EMC Directive, amended by 92/31/EEC and 93/68/EEC and meets the following standards: EN 55013 : 1990, Sections 3.2 and 3.5 EN 55020 : 1988, Sections 4.3, 5.4, 6.2, 7.0, 8.0.

Complies with Australian Standard AS/N25 1053

#### Specifications

##### Power Output :

Channels 1 - 5 @ 8 ohms:	75 w RMS
Channels 1 - 5 @ 4 ohms:	100 w RMS
Sub Channel @ 8 ohms:	180 w RMS
Sub Channel @ 4 ohms:	250 w RMS

##### Distortion:

1 Watt @8 ohms, 1 KHz	.01%
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##### Channel Separation:

@ 1KHz	-88dB
@ 10KHz	-80dB

##### Front panel indicators:

Clip LED:	yes
Protection LED:	yes

##### Weight:

Kg	14
Lbs	30

##### Size

2 RU High (89 mm)  
19" Wide (482 mm)  
16" Deep (400 mm)\*

##### Input sensitivity:

for rated output 8 ohms:	.775V
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##### Frequency response:

@ rated output:	20Hz - 20KHz ±4dB
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##### CMRR

>70dB @ 1 KHz

##### Input Impedance:

40 Kohms Balanced

##### Input Connectors:

Jack

##### Output Connectors:

Neutrik Speakon

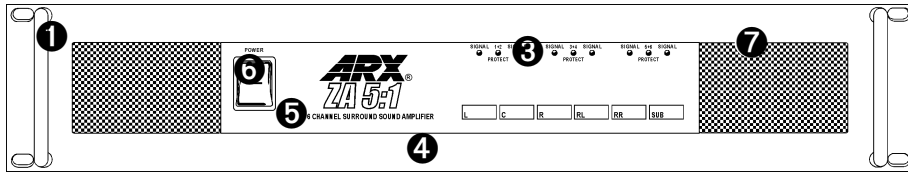
##### Construction

All steel monocoque

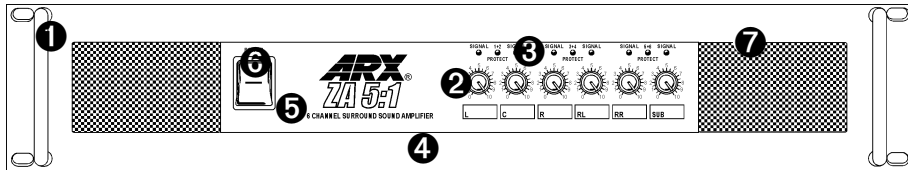
\* Add 30mm to depth behind front panel to allow for rear rack mount ears and handles; add 30mm to depth before front panel to allow for handles and volume controls (if fitted)

## Front Panel Layout

### Standard VR (Volume Rear) Model



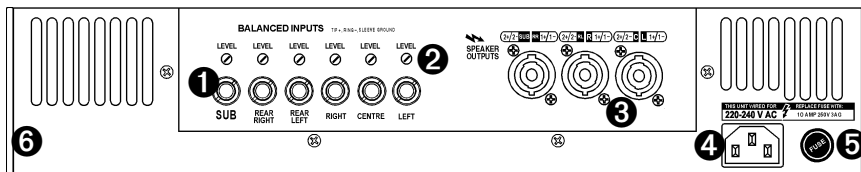
### Optional VF (Volume Front) Model



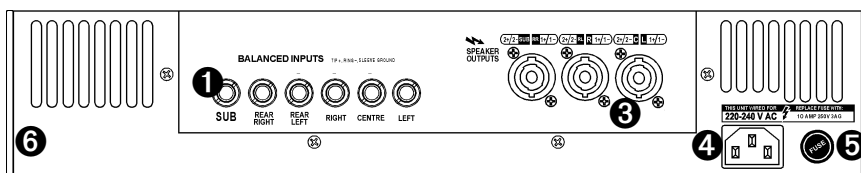
1. EasyGrip Handles
2. Detented Level controls(VF only)
3. Protection, Clip LEDs
4. 4 mm steel front panel
5. Non-scratch Lexan printed panel
6. Illuminated power switch
7. Fan filters. Remove, clean and replace monthly or at first sign of clogging

## Rear Panel Layout

### Standard VR (Volume Rear) Model



### Optional VF (Volume Front) Model

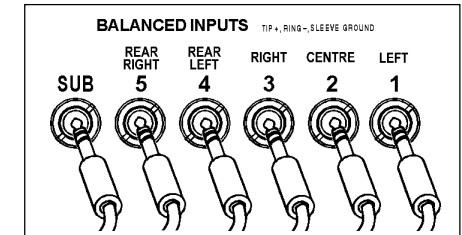


1. Balanced Jack Inputs
2. 20 turn Level controls (VR only). Note that amplifiers are shipped with these controls set at maximum (no attenuation)
3. Neutrik Speakon Output Connectors
4. AC power connector
5. AC Fuse. Replace with value as marked only
6. Heavy Duty Rear rack ears for four point racking

## Connecting up your ZA 5.1

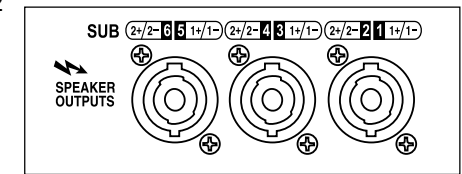
The ZA 5.1 accepts 6 discrete inputs from your surround processor. These connect to the six input jacks as shown in Fig 1.

Fig. 1



The Speaker outputs are fully insulated Neutrik Speakon 4 pole connectors, each handling 2 channels.

Fig 2.



- Connector 1 Left and Centre
- Connector 2 Right and Rear Left
- Connector 3 Rear Right and SUB

It's a good idea to label each speaker cable pair at each end (amplifier end and also speaker cabinet end) to help you connect the system correctly. (Fig. 3) Make sure the polarity of the amplifier outputs matches the polarity of the speakers . i.e. + to +, - to - .

Fig.3

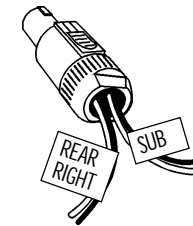
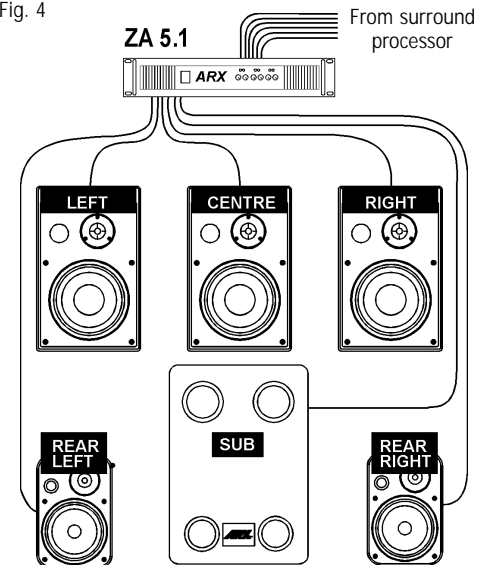


Fig. 4



Connect all the input and output leads, double check the wiring, and ensure that the level controls are turned down before powering up the system. With an incoming signal running, turn up each volume control a small amount to check that everything is running correctly before increasing the levels.

Fig. 4 shows a surround sound system layout using ARX Ambience 5 cabinets for Left, Centre, Right; Ambience 1 cabinets as Left Rear and Right Rear; and an AmbiSUB as the Sub Bass cabinet.

**⚠ WARNING! ⚠**

**⚠ THERE ARE NO USER SERVICEABLE PARTS INSIDE THE AMPLIFIER, SO PLEASE DON'T TAKE THE LID OFF AND POKE AROUND!**

Amplifiers run on DC voltages provided by the amplifier's internal power supply. The ZA series have separate + and - DC fuses for both channels, mounted internally on the main circuit board. The power Mosfets used in the amplifiers are extremely rugged devices, and the correct rating fuses in the power supply ensure that the amplifier circuitry is protected from short circuit damage.

**⚠** A blown DC fuse will be indicated by a very distorted low volume output from that side of the amplifier. A blown AC fuse will be indicated by nothing working at all - check to see if the fans are turning.

**⚠** Any blown fuse should be investigated. It doesn't necessarily mean that something is wrong with the amplifier, but indicates that there is something wrong in the complete signal path, from the mixing console to the speakers.

**⚠ If a fuse blows:**

Get a qualified service person to inspect inside the amplifier. Please don't do it yourself! There are **very** dangerous voltages inside amplifiers, even when they have been turned off!

**Things to check before you plug your amplifier in**

Mains AC power - check that the voltage on your amplifier is the same as the voltage at the power point. **It is a very good idea to check this before plugging the amplifier into the power point!** Be especially careful of plugging into unchecked 'piggyback' plugs, power distribution boxes or extension cables.

**Your warranty does not cover damage caused by incorrect wiring.**

Make sure the amplifier is connected to the same AC power supply and Earth/Ground as the rest of the system, otherwise you may set up a Ground loop hum.

We strongly recommend that you use the rear mounting slots as well as those on the front panel.

There are 2 cooling fans on the ZA amplifiers to force air around and through the heatsinks. Do not block the air exit path!

**Air flow and cooling**

It is **extremely** important that you ensure that there is **unrestricted** air access to these fans, and also **unrestricted** air exit path. Clean the fan filters regularly or at the first sign of becoming clogged.

All ZA amplifiers have sufficient fan cooling capacity built in, and need no extra external fan cooling to operate normally. Their compact 'UltraFin' heatsinks provide massive surface areas for rapid cooling and stable temperatures.

WARM AIR OUT  
AT REAR



COLD AIR IN  
FROM FRONT

**BUT...** If you are racking up a ZA amplifier, you **MUST** allow space in the rack for the air to exit from the **rear** of the amplifier.

If you are using a rack that has a sealed rear panel, then the normal fan cooling of the amplifiers **must** be supplemented by additional fan forced air extraction from the rack. All that air being pumped in by the fans has to exit somewhere!

Remember that Power = Heat, and Maximum air flow = successful heat management.

**Introduction**

Thank you for choosing this ARX amplifier. We hope you enjoy using it as much as we enjoyed creating it. It is a precision engineered product designed for professional use in all pro-audio applications, and as such, a working knowledge of basic electronic safety procedures is assumed on the part of the operator.

Like all ARX equipment, it has undergone extensive factory calibration, testing and 'burn in' before shipping. To ensure continued trouble free use, please familiarise yourself with the contents of this manual before using.

**About the ZA 5.1 amplifier**

The ZA 5.1 is a multi channel surround sound amplifier designed from the ground up for the intensive duty cycle that today's installations demand. More power, more protection; less heat, less weight, and most of all - better sound.

It consists of 5 full range channels, i.e. Left, Centre, Right, Rear Left and Rear Right, plus a dedicated Sub Bass channel. It is ideally suited for all high end surround sound installations and home theatres.

The ZA 5.1 uses the new generation Lateral Mosfet devices for the all-important amplifier output stage, ensuring an ultra fast high frequency, high current-to-load measured in nanoseconds, up to 100 times faster than amplifiers using conventional Bipolar transistors.

Based on the core technology developed by ARX for our new range of ISC Loudspeaker Processors, our new 'Headroom Enhance' circuitry provides Maximum power output levels under all rated load conditions, eliminating Output Stage clipping.

Advanced computer modelling of the ZA 5.1 chassis design has put strength where it's needed, and reduced excess weight where possible. Coupling this with the use of compact toroidal transformers has resulted in an excellent power-to-weight ratio.

A new re-settable High Current relay switched protection circuit instantly disconnect the speakers when a potentially damaging signal or amplifier error is detected.

New Input delay muting circuitry eliminates switch on/switch off noise.

Dual variable speed cooling fans circulate cooling air through ARX's proven 'UltraFin™' heatsink, ensuring that the Mosfet output devices are kept well within their thermal tolerance levels under all operating conditions.

As a company, ARX is dedicated to producing pro audio products that consistently deliver the power and the quality that audio professionals expect.

The ZA 5.1 multi channel surround sound amplifier is proof of our commitment - an amplifier that work as hard as you do, day after day, night after night, because we know that audio professionals like yourself depend on it to earn a living.