

## 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, burned voice coils, or 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 running a speaker system with the ISC leads disconnected, or with a non-ARX crossover, or with the wrong processor.

This warranty gives you and us specific legal rights and you may also have other rights which may 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 ARX distributor for a Return Authorization (RA) number;
2. **Carefully** repack the unit, in its original packaging where possible, including a note with a description of the problem, and a copy of the receipt showing date of purchase. Attach these to the actual unit itself. 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 our service technicians to contact you if they have a question. Also, use **plenty** of packing material - better to be safe than sorry.
3. Send the unit freight prepaid to ARX Systems, at the address given you with your RA number. We will pay the return freight when the serviced unit is returned to you.
4. We strongly recommend you insure the package. We can't fix it if it gets lost! Send it by UPS, Fedex, DHL or any similar service that can track the package. Parcel Post is *not* recommended

If Warranty Registration Card is missing, please write to ARX in the country of purchase, stating model and where purchased, or to ARX, PO Box 15, Moorabbin, Victoria 3189, Australia.

Or you can Email us at: [info@arx.com.au](mailto:info@arx.com.au)

# ZR 'C' Series Constant Voltage POWER AMPLIFIERS

## OWNER'S MANUAL



ARX Systems Pty Ltd, PO Box 15,  
Moorabbin, Victoria 3189, Australia  
**Phone:** (03) 9555 7859 **Fax:** (03) 9555 6747  
**International Fax:** +61-3 -9555 6747  
**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**

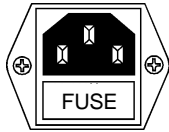


**220-240 V AC, 50 - 60 Hz**

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



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



These amplifiers have a removable AC power lead that connects to an IEC connector (See Picture at Left) with built in fuse. Replace fuse with correct value as marked on the rear of the amplifier

### 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

- Secure the card to the motherboard with the screws and spacers provided.
- Replace the amplifier lid and screws, and test that full range audio is coming from Channel A, and Channel B. When this has been confirmed, the amplifier is ready for use.

Contact your ARX distributor for details of these modules.

### Specifications

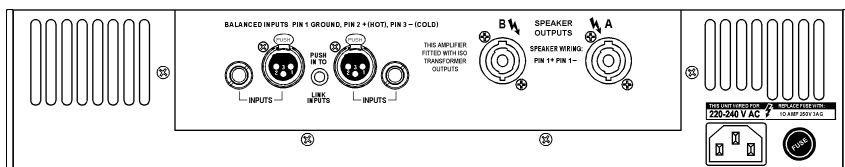
	ZR350C	ZR550	ZR850
<b>Power Output :</b>			
Each channel (W/RMS)	100	200	300
<b>Distortion:</b>			
1 Watt @8 ohms	0.06%	0.06%	0.06%
10 Watts @8 ohms	0.05%	0.05%	0.05%
Prior to clip @8 ohms	0.08%	0.08%	0.08%
<b>Channel Separation:</b>			
@ 1KHz	-88dB	-88dB	-88dB
@ 10KHz	-80dB	-80dB	-80dB
<b>Front panel indicators:</b>			
Clip LED:	yes	yes	yes
Protection:	yes	yes	yes
<b>Weight:</b> Kg			
	14	16	18
Lbs			
	32	36	40
<b>Size</b>			
	2 RU High (89 mm)		
	19" Wide (482 mm)		
	16" Deep (405 mm)*		
<b>Input sensitivity:</b> for			
rated output 8 ohms:	.85V	.85V	1.15V
<b>Frequency response:</b>			
@ rated output:	20Hz - 20KHz +/- .4dB		
<b>Input Impedance:</b>			
	40Kohms Balanced		
<b>Input Connectors:</b>			
	XLR/Jack		
<b>Output Connectors:</b>			
	Neutrik Speakon		
<b>Construction</b>			
	All steel monocoque		

\* Add 80mm to depth behind front panel to allow for rear rack mount ears and handles; add 40mm to depth before front panel to allow for handles and controls



### Front Panel

- EasyGrip Handles
- Detented Level controls
- Protection and Clip LEDs
- 4 mm steel front panel
- Non-scratch Lexan printed panel
- Illuminated power switch
- Fan filters



### Rear Panel

- Balanced Jack and XLR Inputs
- Inputs Link switch; sends whatever signal is connected to Channel A to Channel B as well, eliminating the need for patch leads.
- ISO Transformer coupled Speakon Outputs, wired to Pin # 1 + and Pin # 1 -
- AC power connector with integral fuse.
- Heavy Duty Rear rack ears for four point racking

### Application Notes

#### Things to check before you plug the amplifier in

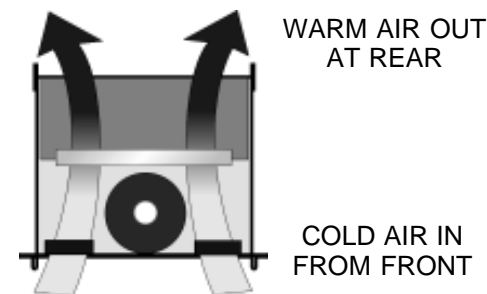
- ⚡ Main AC power - check that the voltage marked on your amplifier is the same as the voltage at the power point. It is a good idea to check this before plugging the amplifier into the power point. Be especially careful of plugging into unchecked 'piggyback' plugs, power distribution boxes or extension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

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

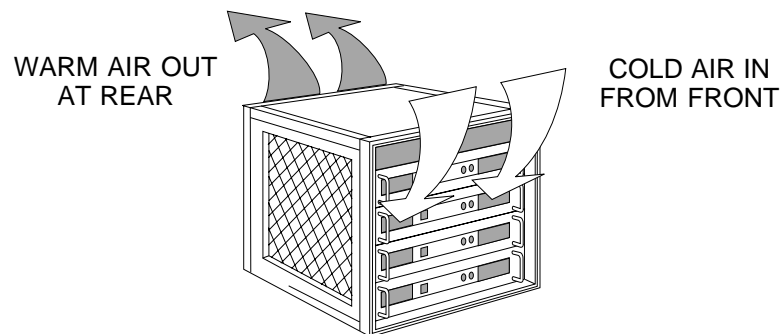
Make sure the amplifier is connected to the same AC power supply and Earth/ Ground as the rest of the system, otherwise you may set up a Ground loop hum. The ZR550C weighs approximately 14 kilos/30 lbs, and the ZR850C 16 kilos/34 lbs. We strongly recommend that you use the rear mounting slots as well as those on the front panel.

- ⚠ All these amplifiers have cooling fans that force air around and through the heatsinks. There are 2 fans on each model in the ZR 'C' series

### Air flow diagram



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 ZR 'C' series 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.

### BUT...

When racking up these amplifiers, a you **MUST** allow space for the air to exit from the **rear** of the amplifier. Remember that Power = Heat, and Maximum air flow = successful heat management.

### Other Rear Panel Controls

#### • Input Link Switch


Pushing IN the Input Link switch sends whatever signal is connected to Channel A to Channel B as well, eliminating the need for patch leads. Also known as Parallel Mono mode.




## **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 ZR 'C' series have separate + and - DC fuses for both channels, mounted internally on the power supply 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 an AC fuse blows:**

- Switch the power off, replace the fuse with another of the same rating.
- Switch the power back on.
- If it blows again, switch the power off and replace the fuse with another of the same rating.



- If it blows again, then contact your nearest ARX service centre or the dealer where you bought the amplifier.



#### **If a DC 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!

### **Plug-in Modules**



The ZR 'C' series feature an internal insert point for the new range of ARX Plug-in module cards: Plug-in Loudspeaker processors specifically tailored for the ARX MicroMAX range of speaker systems.



**Note: Fitting the card requires removal of the amplifier lid and should only be done by qualified technicians.**

1. Switch amplifier off and remove from power point.
2. Allow all capacitors to discharge by waiting at least 10 minutes.
3. Remove the 12 screws holding the lid on.
4. Gently insert the card component side up into the mating connector on the left hand side of the amplifier motherboard.
5. Switch the DIP switch S4 from NOR to CH B, and DIP switch S5 from NOR to CH A. These switches are mounted on the motherboard immediately above the plug in card, looking from the back of the amplifier to the front.

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## **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 ZR 'C' Series amplifiers**

The ARX ZR 'C' series amplifiers (the C denotes Contractor) are designed smart, and ready for the intensive duty cycle that today's installations demand. More power, more protection, less heat, less weight. These amplifiers represent significant breakthroughs in the art of providing effortless, reliable power from compact, efficient amplifier designs. They incorporate 2 x toroidal output line transformers, for easily driving constant voltage speaker systems.

For the all-important amplifier output stage, the ZR 'C' series use the new generation Lateral Mosfet devices. These provide ultra fast high current-to-load capability, switching many amperes of high frequency current in nanoseconds, up to 100 times faster than amplifiers using conventional Bipolar transistors.

Our massive precision engineered UltraFin™ heat exchanger rapidly and evenly dissipates heat from the amplifier. Twin cooling fans supply a high c.f.m forced air supply to ensure optimum temperature of the output devices.

'Headroom Enhance' circuitry based on the core ISC error correction technology developed for our new range of ISC Loudspeaker Processors. This provides Maximum power output levels under all AC mains supply voltages and rated load conditions, eliminating Output Stage clipping.

All the ZR series amplifiers have new re-settable High Current relay switched protection circuits that instantly disconnect the speakers when a potentially damaging signal is detected. New Input delay muting circuitry eliminates switch on/switch off noise.

A feature of the ZR series is an internal insert point for the new range of ARX Plug-in modules, such as the **MicroPRO** Plug-in 'processor-on-a-card' with all operating parameters optimised for the MicroMAX range of speakers. The MicroPRO PlugIn eliminates the need for a stand-alone processor, reducing system cost, wiring and size.

At ARX we are committed to producing amplifiers that keep going day after day, night after night, because we know that audio professionals like yourself depend on them to earn a living.

The new ZR 'C' series is proof of that commitment.