

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, 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

ZR Series 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
Email: 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**
 - 120 V AC, 50 - 60 Hz**
 - 220-240 V AC, 50 - 60 Hz**
 - 240 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.*
- Your warranty does not cover connecting the amplifier to the wrong voltage AC power!*



These amplifiers have a removable AC power lead that connects to an IEC connector (See Picture at Left). 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

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

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

RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR

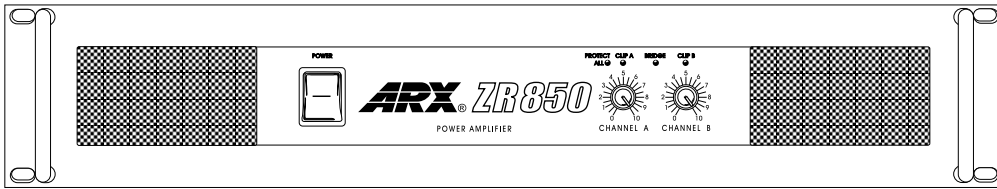
CE **N1819**

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

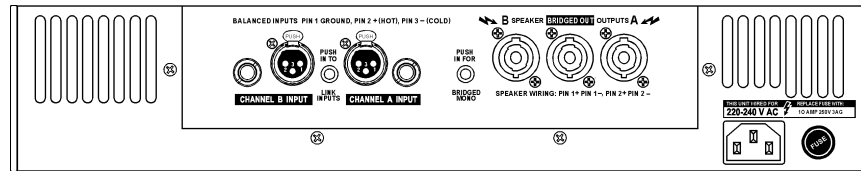
Specifications	ZR350	ZR550	ZR850
Power Output :			
Both channels @ 8 ohms:	100	200	300
Both channels @ 4 ohms:	150	270	400
Bridged @ 8 ohms :	300	540	800
Distortion:			
1 Watt @8 ohms	0.6%	.06%	.06%
10 Watts @8 ohms	.05%	.05%	.05%
Prior to clip @8 ohms	.08%	.08%	.08%
1 Watt @4 ohms	.08%	.08%	.08%
10 Watts @4 ohms	.09%	.09%	.09%
Prior to clip @4 ohms	.09%	.09%	.09%
Channel Separation:			
@ 1KHz	-88dB	-88dB	-88dB
@ 10KHz	-88dB	-80dB	-80dB
Front panel indicators:			
Clip LED:	yes	yes	yes
Bridge LED:	yes	yes	yes
Protection LED:	yes	yes	yes
Weight:			
Kg	10	11	12
Lbs	22	24	26
Size			
2 RU High (89 mm) 19" Wide (482 mm) 16" Deep (400 mm)*			
Input sensitivity: for rated output 8 ohms:			
.775V .775V 1.15V			
Frequency response: @ rated output:			
20Hz - 20KHz ±.4dB			
CMRR			
>70dB @ 1 KHz			
Input Impedance:			
40Kohms Balanced			
Input Connectors:			
Female XLR and Jack			
Output Connectors:			
Neutrik Speakon			
Construction			
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, Clip, and Bridge LEDs
- 4 mm steel front panel
- Non-scratch Lexan printed panel
- Illuminated power switch
- Fan filters. Remove, clean and replace at first sign of clogging



Rear Panel

- Balanced Jack and XLR Inputs
- Inputs Link switch
- Bridged Mono mode switch
- Neutrik Speakon Output Connectors
- AC power connector
- Fuse - 3AG type. Replace with correct value only - as marked on amplifier rear
- Heavy Duty Rear rack ears for four point racking

Things to check before you plug your amplifier in

⚡ Main AC power - check that the voltage 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.

! 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 ZR series amplifiers to force air around and through the heatsinks. Do not block the air exit path!

Air flow and cooling

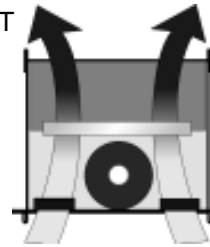
It is **extremely** important that you ensure that there is **unrestricted** air access to these fans, and also **unrestricted** air exit path. Clean the fan filters regularly or at the first sign of becoming clogged.

All ZR 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.

ZR350, ZR550, ZR850 COOLING DIAGRAM

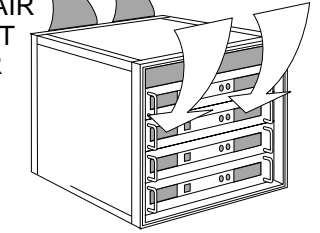
WARM AIR OUT
AT REAR

COLD AIR IN
FROM FRONT



WARM AIR
OUT AT
REAR

COLD AIR IN
FROM FRONT



BUT...When racking up ZR series amplifiers, you **MUST** allow space for the air to exit from the **rear** of the amplifier.

If you are using a rack that has a sealed rear panel, with pre wired multipin connectors, 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.

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.

• Bridged Mono Switch

READ THIS BEFORE WIRING UP FOR BRIDGED MODE

Pushing this in switches the amplifier into a high power single channel unit to drive a single 8 ohm load. Please follow these instructions exactly.

1. Turn the amplifier off.
2. Run an Input lead into Channel A input only
3. Run an Output lead from the Bridged Mono Centre Speakon output connector only
5. Double check your connections, then turn the amplifier power back on.
6. Check at low level before turning it up!

WARNING All the amplifiers deliver very high RMS power in this mode. Make sure your speakers are capable of handling this amount of power. An 8 ohm speaker load in bridged mono mode is equivalent to a 4 ohm load per channel.

Running in Bi-amp Mode with Plug-in Crossover module fitted

If a Plug-in crossover module is fitted, then Channel A will be the LOWER frequency, and Channel B the HIGHER frequency.



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



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 SX 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 series feature an internal insert point for the new range of ARX Plug-in module cards: Active crossover boards for easy Bi-Amping, and Plug-in Loudspeaker processors specifically tailored for the ARX PowerMAX and 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.
6. Secure the card to the motherboard with the screws and spacers provided.
7. Replace the amplifier lid and screws, and test that Low frequencies are coming from Channel A, and High from Channel B. When this has been confirmed, the amplifier is ready for use.

Contact your ARX distributor for details of these modules.

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 ZR350, 550, and 850 amplifiers

A complete range of amplifiers designed from the ground up for the intensive duty cycle that today's standards of production demand. More power, more protection; less heat, less weight, and most of all - better sound.

For the ZR series, ARX design engineers have chosen 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.

The ZR series feature an internal insert point for the new range of ARX Plug-in modules: Active crossover boards for easy Bi-Amping, and Plug-in Loudspeaker processors specifically tailored for the ARX PowerMAX and MicroMAX range of speaker systems. Advanced computer modelling of the ZR series 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 for the ZR series.

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 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 ZR series is proof of our commitment - a line of amplifiers that work as hard as you do, day after day, night after night, because we know that audio professionals like yourself depend on them to earn a living.