



KRAMER ELECTRONICS LTD.

# USER MANUAL

MODEL:

**920**  
70V/100V Power Amplifier

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P/N: 2900-300308 Rev 4



## 920 Power Amplifier Quick Start Guide

This guide helps you install and use your product for the first time. For more detailed information, go to [http://www.kramerelectronics.com/support/product\\_downloads.asp](http://www.kramerelectronics.com/support/product_downloads.asp) to download the latest manual or scan the QR code on the left.

### Step 1: Check what's in the box

- ✓ 920 Audio Amplifier
- ✓ 1 Power cord
- ✓ Rack "ears"
- ✓ 4 Rubber feet
- ✓ 1 Quick Start sheet



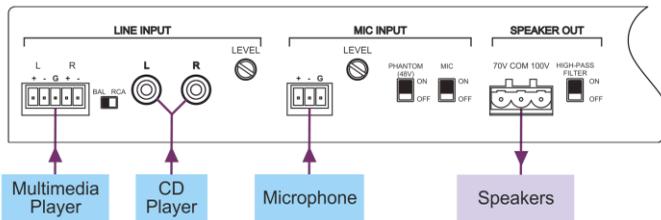
Save the original box and packaging materials in case you need to return your **920** for service.

### Step 2: Install the 920

Attach the rubber feet and place on a table or mount the **920** in a rack (using the rack "ears" supplied).

### Step 3: Connect the inputs and output

Always switch off the power to each device before connecting it to your **920**.



Always use Kramer high-performance cables for connecting AV equipment to the **920**.

### Step 4: Configure the 920

- Adjust the line input level
- Set the microphone on or off
- Set the phantom power on or off
- Adjust the microphone input level
- Set the High-pass filter on or off

### Step 5: Connect the power

- Connect the power cord to the **920** and plug it into the mains electricity
- Turn the device on



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# 1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Products; GROUP 12: Digital Signage; and GROUP 13: Audio, and GROUP 14: Collaboration.

Congratulations on purchasing your Kramer **920 Power Amplifier**, which is ideal for the following typical applications:

- Boardrooms
- Classrooms
- Hospitality
- Transportation
- Retail
- Entertainment
- Houses of worship

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## 2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual



Go to [http://www.kramerelectronics.com/support/product\\_downloads.asp](http://www.kramerelectronics.com/support/product_downloads.asp) to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

### 2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **920** away from moisture, excessive sunlight and dust



This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

### 2.2 Safety Instructions



**Caution:** There are no operator serviceable parts inside the unit

**Warning:** Use only the power cord that is supplied with the unit

**Warning:** Do not open the unit. High voltages can cause electrical shock! Servicing by qualified personnel only

**Warning:** Disconnect the power and unplug the unit from the wall before installing

## 2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at <http://www.kramerelectronics.com/support/recycling/>.

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## 3 Overview

The Kramer **920** is a high-performance audio power amplifier for balanced, unbalanced and microphone signals, that can output 200W of audio into 70V or 100V speaker systems.

The **920 Power Amplifier** features:

- 70V or 100V amplification
- Balanced, unbalanced and microphone inputs
- Input level sensitivity adjustment for line and microphone inputs
- Optional microphone 48V phantom power
- Optional high-pass filter
- 1U rack-mount enclosure

## 4 Defining the 920 Power Amplifier

Figure 1 defines the **920 Power Amplifier**.

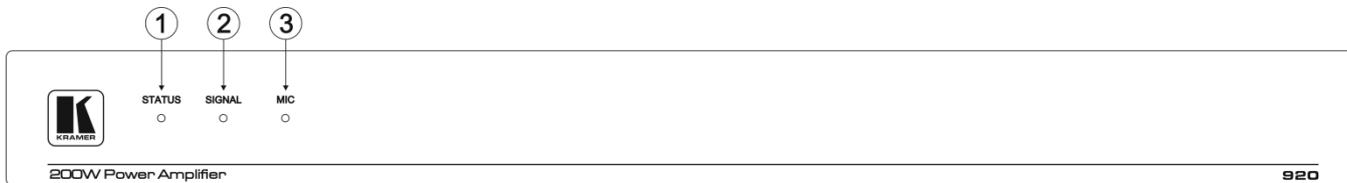


Figure 1: 920 Power Amplifier Front Panel

#	Feature	Function
1	STATUS LED	Lights green when the device is active. Lights orange when the device is in standby mode. Lights red when the device is in protection mode
2	SIGNAL LED	Lights green when the input signal is present. Lights yellow when the signal is clipping
3	MIC LED	Lights green when the microphone input signal is present

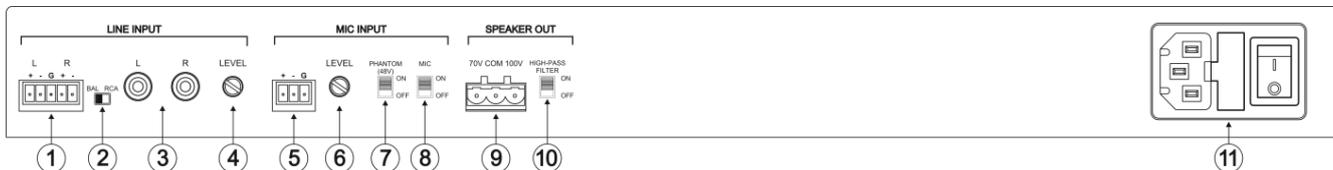


Figure 2: 920 Power Amplifier Rear Panel

#	Feature		Function
1	LINE INPUT	5-pin Terminal Block	Connect to the balanced stereo source
2		BAL/ RCA Selector	Selects the balanced or unbalanced (RCA) input selector
3		RCA Connectors	Connect to the unbalanced stereo source
4		LEVEL Trimmer	Adjusts the line-level input
5	MIC INPUT	3-pin Terminal Block	Connect to the microphone
6		LEVEL Trimmer	Adjusts the microphone input level
7		PHANTOM (48V) Switch	Phantom power on/off switch
8		MIC Switch	Microphone input on/off switch
9	SPEAKER OUT	3-pin Terminal Connector	70V or 100V output to speakers (see <a href="#">Section 5.2</a> )
10		HIGH-PASS FILTER Switch	High-pass filter on/off selector
11	Mains Power Unit	Connect to the mains power	
		Mains Fuse for protecting the 920	
		Switch for turning the device on and off	

# 5 Connecting the 920

This chapter comprises the following sections:

- Connecting the **920** (see [Section 5.1](#))
- Connecting speakers (see [Section 5.2](#))
- Connecting a microphone (see [Section 5.3](#))

## 5.1 Connecting the 920



Always switch off the power to each device before connecting it to your **920**. After connecting your **920**, connect its power and then switch on the power to each device.

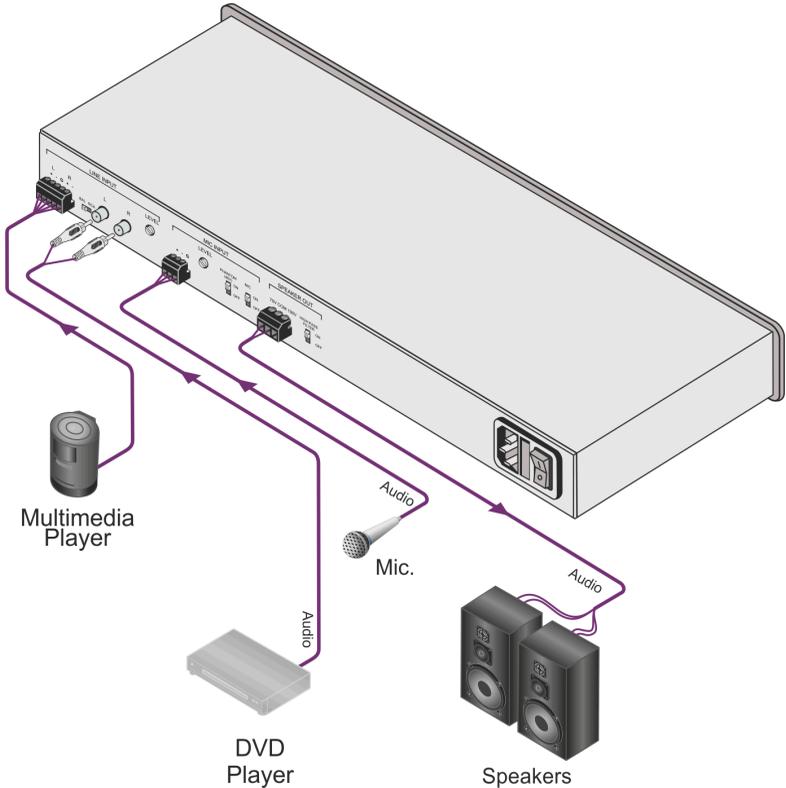


Figure 3: Connecting the 920 Power Amplifier

To connect the **920** as illustrated in the example in [Figure 3](#):

1. Connect a balanced, stereo audio source, (for example, a multimedia player) to the 5-pin Line Input terminal block and an unbalanced stereo audio source to the Line Input RCA connectors.
2. Select the BAL-RCA switch accordingly.
3. Connect a microphone to the 3-pin Mic Input terminal block.
4. Connect the speaker(s) to the Speaker Out 3-pin terminal block, (see [Section 5.2](#)).
5. Connect the unit to the mains supply using the supplied power cord.

## 5.2 Connecting Speakers

You can connect one or more 70V or 100V speakers to the **920**. When connecting more than one speaker they must be connected in parallel as shown in [Figure 4](#) (100V speakers) and [Figure 5](#) (70V speakers).

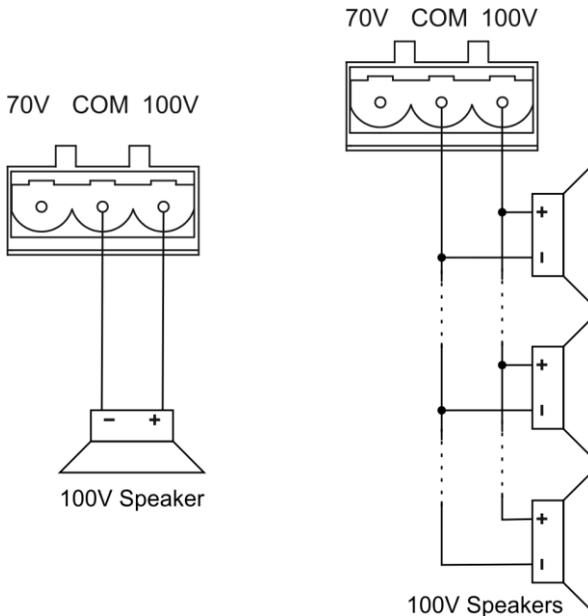


Figure 4: Connecting One or Multiple Speakers to the 920 (100V)

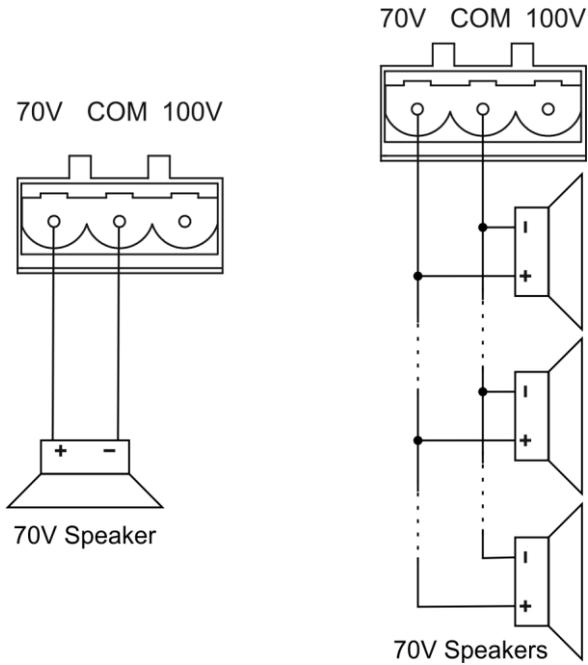


Figure 5: Connecting One or Multiple Speakers to the 920 (70V)

### 5.3 Connecting a Microphone

The **920** can provide phantom power (48V) to a microphone.

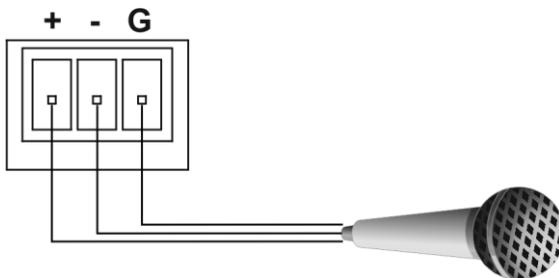


Figure 6: Connecting a microphone

## 6 Technical Specifications

INPUT:	1 Balanced stereo +4dBu/10kΩ on a 5-pin removable terminal block 1 Unbalanced stereo on 2 RCA connectors
OUTPUT:	1 speaker 70/100V output on a 3-pin removable large terminal block
INPUT SENSITIVITY:	0.3V to 1.23V –10dBu to 4 dBu
OUTPUT POWER:	200W
AMPLIFIER TYPE:	Class D
MAXIMUM VOLTAGE GAIN:	+26dB
BANDWIDTH (-3dB):	20Hz to 20kHz
S/N RATIO:	–75dB @ 14dBu amplification (0.039%)
CONTROLS:	Screw trimmer for line and mic input sensitivity
HIGH PASS FILTER:	When on: Frequencies below 120Hz are attenuated by 12dB per octave, –12dB @ 120Hz –24dB @ 60Hz –36dB @ 30Hz
INPUT SATURATION:	Maximum input level is 3.9V pp @ –48dB
AUDIO THD + NOISE:	70v main output: –71dB @ 7.8 dBu amplification 100v main output: –72 db @ 8.3 dBu amplification
AUDIO 2nd HARMONIC:	0.08% for 70v/100v output
POWER SOURCE:	See label by power socket on rear panel of unit:  USA version: 100-120V AC, 50/60Hz, 330VA OR European version: 200-240V AC, 50/60Hz, 480VA
DIMENSIONS:	19" x 7.25" x 1U (W, D, H) rack-mountable
WEIGHT:	1.7kg (3.75lbs) approx.
INCLUDED ACCESSORIES:	Power cord, rack ears
Specifications are subject to change without notice at <a href="http://www.kramerelectronics.com">http://www.kramerelectronics.com</a>	

## LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

### What is Covered

This limited warranty covers defects in materials and workmanship in this product.

### What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

### How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

### Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

### What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

### What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

### How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at [www.kramerelectronics.com](http://www.kramerelectronics.com) or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

### Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

### Exclusive Remedy

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF KRAMER ELECTRONICS CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN ALL IMPLIED WARRANTIES COVERING THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THIS PRODUCT AS PROVIDED UNDER APPLICABLE LAW.

IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

### Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at [www.kramerelectronics.com](http://www.kramerelectronics.com) or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.



For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

**We welcome your questions, comments, and feedback.**

Web site: [www.kramerelectronics.com](http://www.kramerelectronics.com)

E-mail: [info@kramerel.com](mailto:info@kramerel.com)



### SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing



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