

ELX-1A Rack-Mount Mic/Line Mixer

- Four inputs, one output in a single rack space
- Very-high-quality audio performance
- High reliability
- Extensive filtering circuitry and shielding protect against rf interference
- Power from 115/230-V ac or external dc
- Transformer-isolated output
- Headphone output with separate power amp and level control
- Switchable 1-kHz oscillator
- Switchable output limiter prevents clipping
- 30-V phantom power

KEY GENERAL SPECIFICATIONS¹

Conditions:

1. 0 dBu = 0.775 V rms.
2. 0 dBm = 1 mW into 600 ohms (0.775 V across 600 ohms).
3. Measurements are referred to a 1-kHz, 0-dBu sine-wave input unless noted.
4. Measurement bandwidth is restricted to 30 kHz unless noted.
5. Load impedance is 600 ohms unless noted.

Frequency Response, Any Input to Any Output (0-dBm output, 500-kHz measurement bandwidth):

30-20,000 Hz, +0/-1 dB

Total Harmonic Distortion Plus Noise, Mic/Line Output,

+4 dBm, 20-20,000 Hz:

<0.15%

+18 dBm, 50-20,000 Hz:

<0.15%

Stacking or Headphone Output,

+18 dBm, 20-20,000 Hz:

<0.10%

Equivalent Input Noise (mic input, maximum gain, 150-ohm source, "A" weighted):

-130 dBm, typical

Output Noise, Inputs Down, "A" Weighted,

Master Down:

≤ -82 dBm

Master at Nominal:

≤ -81 dBm

Master Full Up:

≤ -68 dBm

Maximum Voltage Gain, ±2 dB,

Mic Input to Main Output:

91 dB

Mic Input to Headphone Output:

82 dB

Mic Input to Stacking Output (modified for insert patching):²

63 dB

Common-Mode Rejection, 20-20,000 Hz:

60 dB, typical

Low-Cut Filter,

Slope:

6 dB per octave

Corner Frequency:

100 Hz

Phantom Power (mic inputs only, 3,600-ohm equivalent source resistance):

30-V dc³

Power Requirements,

ac:

115 or 230 volts, switchable,

50/60 Hz, 12 watts

External dc:²

24-45 volts, 100-mA maximum

Colors, Materials and Finishes,

Chassis:

Dark gray painted metal with white graphics

Knobs:

Medium gray with light gray inserts

Switches:

Light gray

Dimensions,

Height:

4.45 cm (1.75 in.)

Width:

48.3 cm (19.0 in.)

Depth:

21.0 cm (8.25 in.)

Net Weight:

3.36 kg (7.4 lb)

Shipping Weight:

4.1 kg (9.0 lb)

DESCRIPTION

The Electro-Voice ELX-1A mixer is a compact, high-performance audio mixer designed for professional applications where clean audio and reliable operation are important. Features and performance make the ELX-1A ideally suited for broadcast and production recording applications. The ELX-1A can mount in a single rack space or set on any surface. Extensive rf filtering circuitry and shielding provide protection against rf interference.

The block diagram is shown in Figure 1. Figure 2 shows the front and rear panels.

GENERAL FEATURES

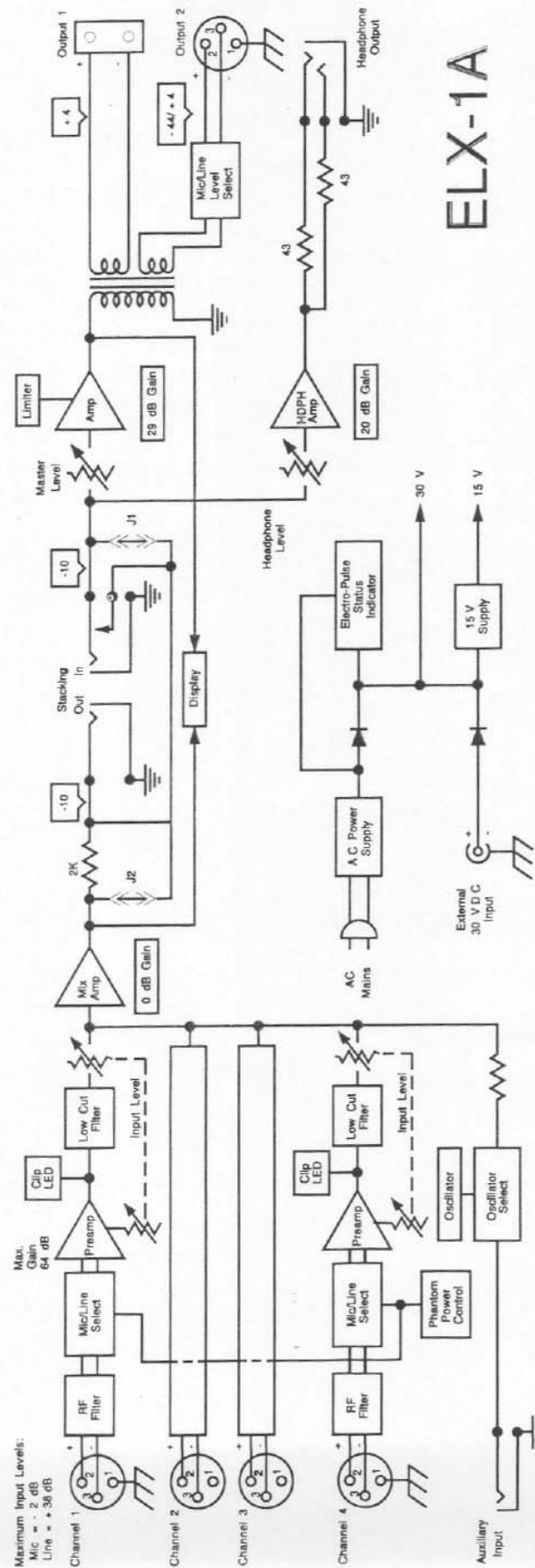
- Optimum circuit design provides flat frequency response, low distortion and low noise.
- Space-saving, compact design uses only one rack space (1.75 in.).
- Powerable from ac line or external dc source, with automatic switchover; detachable line cord.
- Electro-Pulse™ indicator shows power status.
- Switchable, low-distortion 1-kHz sine-wave oscillator facilitates level calibration.
- Ten-segment, three-color PPM LED bargraph meter shows peak output level and has clip indicators; can be converted internally to VU characteristics.
- Switchable output limiter prevents clipping; yellow LED lights when limiting action occurs.

1. For Other General Specifications, Input Specifications, and Output Specifications, see back page.

2. See ELX-1A owner's operating and service instructions.

3. If mixer is powered from an external dc source of less than 30 volts (24 volts minimum), the phantom power voltage is reduced to the source value.

FIGURE 1 — Block Diagram



ELX-1A

INPUT SECTION FEATURES

- A single 3-pin XLR-type connector accepts microphone and line-level inputs via a mic/line switch.
- Circuitry incorporates rf filters and a balanced transformerless design for low distortion and high signal quality.
- Switchable 30-volt phantom power is available at microphone inputs.
- Input controls set gain of preamps for optimum noise performance with any input signal.
- LED indicator at each input lights if clipping occurs.
- Low-cut filters switchable at each input reduce low-frequency microphone handling and background noise.

OUTPUT SECTION FEATURES

- Transformer-isolated output with binding posts.
- Transformer-isolated output with 3-pin XLR-type connector and mic/line level-select switch.
- Headphone output, with separate power amp and level control, can drive any headphones or cue speaker.
- Auxiliary input jack is for fifth input or for stacking additional mixers.
- Two stacking jacks are for interconnection with additional mixers, and can be modified for insert patching.

CONNECTIONS

- All mic/line inputs have female 3-pin XLR-type connectors. Pin 2 is positive; pin 3 is negative.
- The transformer-isolated outputs have a male 3-pin XLR-type connector and dual binding posts.
- The headphone output is a three-conductor 1/4-inch phone jack.
- All other connections on the mixer are two-conductor 1/4-inch phone jacks.
- All stacking and auxiliary inputs are line level.

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The mixer shall have four transformerless balanced input channels with rear-mounted female 3-pin XLR-type connectors, switch selectable for microphone or line-level sources. Each input shall have the following front-panel controls: LED clip indicator; switchable low-cut filter with 6-dB-per-octave slope at a corner frequency of 100 Hz; and a rotary level control. Each balanced input shall be enhanced with rf protection circuitry. Each main input shall have 30-V dc remote microphone power applied to pins 2 and 3, with a rear-mounted master phantom power switch.

There shall be a 1/4-inch phone jack auxiliary input with the signal from this jack provided to the mix bus. Stacking input and output 1/4-inch phone jacks shall be provided for the mix bus.

There shall be a single monaural output. Output shall have a front-panel rotary level control and a ten-segment LED peak program meter. Output shall be transformer isolated with two secondary windings. Output connections shall be provided as follows: dual binding posts for a transformer-isolated output; male 3-pin XLR-type connector, switch selectable for a microphone or line-level transformer-isolated output.

A chassis-ground connection shall be provided on a rear-mounted binding post.

A headphone level control and a three-conductor 1/4-inch jack shall be provided on the front panel for headphones. The headphones shall monitor the mix bus prior to the output level control.

An internal oscillator with a front-panel switch shall provide a 1-kHz sine-wave signal to the mix bus. Sine-wave distortion of the oscillator shall be <1.5%.

A limiter with a front-panel switch shall be provided in the output amplifier circuitry after the output level control. Limiter threshold shall be +14 dBu. Front-panel LED indicator shall light whenever limiting occurs.

A main power switch shall be located on the front panel. The mixer shall operate on 115- or 230-V ac, 50/60 Hz, switchable on the rear panel, and consume less than 12 watts. The mixer shall also operate on 24-45-V dc external power accessible through a rear-mounted Switchcraft 722A-type connector, with a maximum external dc current draw of 100 mA. A removable power cord and rear-mounted IEC connector and fuse holder shall be provided for ac operation. A front-panel LED indicator shall light steadily when ac power is applied and flash when dc power is applied, with the flash rate corresponding to the supply voltage. The mixer shall be operable over the temperature range of -20°C (-4°F) to 60°C (140°F).

The mixer shall meet or exceed the following performance specifications: frequency response from any input to any output, 30 Hz to 20 kHz, +0/-1 dB; total harmonic distortion of less than 0.15% 20 Hz to 20 kHz at +4 dBm output level and less than 0.15% 50 Hz to 20 kHz at +18 dBm output level; equivalent input noise of 130 dBm (typical, "A" weighted) with 150-ohm source and maximum preamp gain; maximum voltage gain of 91 dB (microphone input to main output); and common-mode rejection of 60 dB at 20 Hz to 20 kHz. All switches shall be of a positive-action push-button type. The cabinet shall be made of black painted sheet metal with a dark gray front panel, and have the following dimensions: height, 4.45 cm (1.75 in.); width, 48.3 cm (19.0 in.); depth 21.0 cm (8.25 in.). The weight shall be 3.36 kg (7.40 lb). The mixer shall be Electro-Voice model ELX-1A.

WARRANTY (Limited)

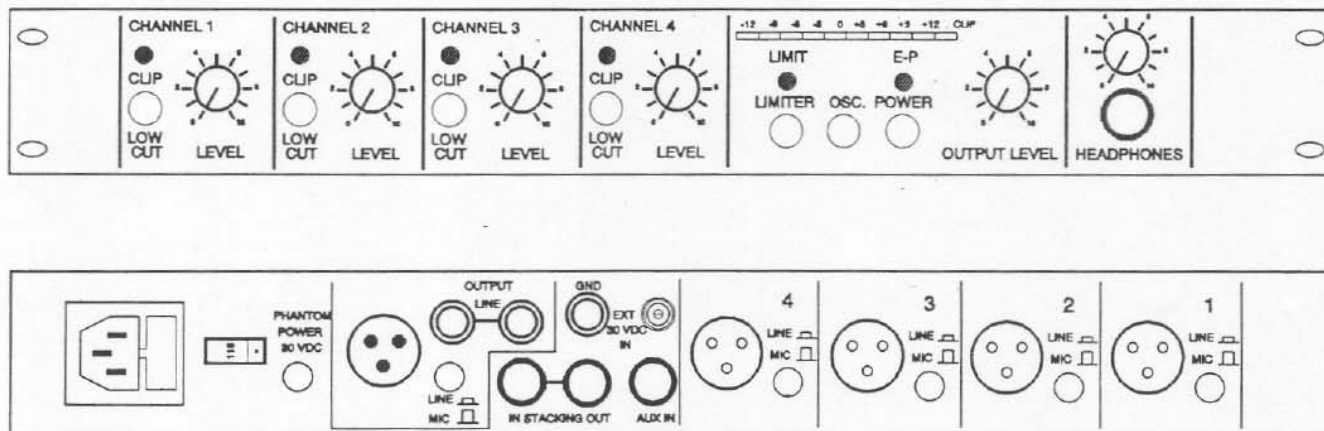
Electro-Voice products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Electro-Voice or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Electro-Voice or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Electro-Voice at 600 Cecil Street, Buchanan, MI 49107 (616/695-6831 or 800/234-6831) and/or Electro-Voice West, at 8234 Doe Avenue, Visalia, CA 93291 (209/651-7777 or 800/825-1242). **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Electro-Voice and EV/Dynacord Electronics are guaranteed against malfunction due to defects in materials or workmanship for a period of three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (616/695-6831 or 800/234-6831).

Specifications subject to change without notice.

FIGURE 2 — Front and Rear Views



OTHER GENERAL SPECIFICATIONS

Clip LED's:

Light 1 dB below clipping, follow supply voltage

Limiter Threshold (re 17-dBm line output):

+14 dBu, ± 0.5 dB

Oscillator:

1 kHz at <1.5% distortion

Output Display,

Range:

-12 dBu to clipping

Rise/Fall Time:

10 msec/3 sec

Shorting Protection:

Any output may be shorted indefinitely without damage

Operating Temperature:

-20°C to +60°C (-4°F to +140°F)

INPUT SPECIFICATIONS

Input Impedance,

Mic:

3,500 ohms

Line:

30,000 ohms

Aux:

15,000 ohms

Stacking:

2,000 ohms

Nominal Level,

Mic:

-50 dBu

Line:

-10 dBu

Aux:

-10 dBu

Stacking:

-10 dBu

Maximum Level,

Mic:

-5 dBu

Line:

+35 dBu

Aux:

+18 dBu

Stacking:

+18 dBu

OUTPUT SPECIFICATIONS

Output Impedance,

Main,

Binding Posts:

60 ohms

XLR—Line Level:

60 ohms

XLR—Mic Level:

10 ohms

Headphone:

43 ohms left channel;

43 ohms right channel

Stacking:

2,000 ohms

Nominal Load Impedance,

Main,

Binding Posts:

600 ohms

XLR—Line Level:

600 ohms

Headphone:

8-600 ohms left channel;

8-600 ohms right channel

Stacking:

2,000 ohms

Nominal Level,

Main,

Binding Posts:

+4 dBu

XLR—Line Level:

+4 dBu

XLR—Mic Level:

-44 dBu

Headphone,

8-Ohm Load:

-11 dBu

600-Ohm Load:

-4 dBu

Stacking:

-10 dBu

Maximum Level:

Main,

Binding Posts:

+18 dBu

XLR—Line Level:

+18 dBu

XLR—Mic Level:

-30 dBu

Headphone,

8-Ohm Load:

-1 dBu

600-Ohm Load:

+18 dBu

Stacking:

+12 dBu



ELECTRO-VOICE

a MARK IV company

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