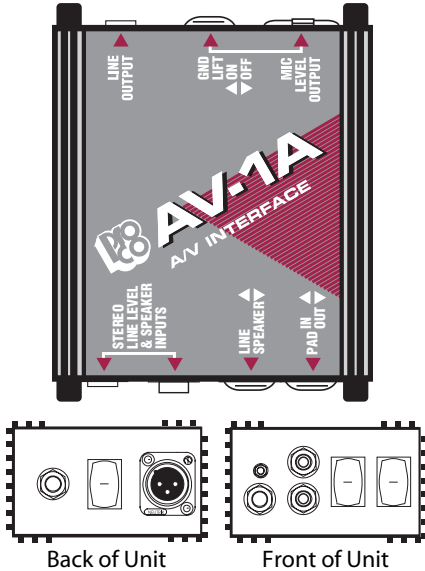




MonoLink™ Series AV-1A

Audio/Video Interface Technical Information



AV-1A Features

- Better Sound from Projectors, Computers and DVDs
- Ideal for Meetings, Lectures and Presentations
- Output Transformer for Ground Isolation
- Offers Choice of Standard Connectors — No Adapters Needed
- Handles Signal Levels from -20 to +40 dBv
- 16Ω Dummy Load Prevents Amplifier Damage
- Rugged “Uni-box™” Construction Provides Protection and Shielding

Description

The Pro Co Monolink AV-1A Audio-Visual Interface allows the line- or speaker-level outputs of movie projectors, audio and video tape/cassette recorders, computers, etc., to be connected to microphone inputs of house or portable P.A. systems for programs in school auditoriums, lecture halls, civic meetings and corporate board rooms. The AV-1A provides audio interfacing and isolation with wide response and low distortion.

Three different types of input connectors—1/4" (6.3mm) T/R/S phone, 2 RCA-type phono, and 3.5mm T/R/S mini jacks — simplify connection of most equipment. The LINE/SPKR attenuator switch allows the AV-1A to be safely connected to the speaker outputs of older tube-type equipment: a 16-ohm, 5-watt load resistor simulates the speaker impedance to prevent damage to the amplifier output stage, while a high-frequency filter reduces hiss from noisy electronics. The HI/LO attenuator switch allows greater flexibility for handling line output sources at either “hi-fi” -10 dBV or “professional” +4dBm levels. The DBT-1 transformer provides a floating 150-ohm output with a standard 3-pin male XLR-type connector, so connection to most P.A. system mixers or mixer/amplifiers requires only a standard microphone cable. The GND/LFT switch eliminates hum and buzz from AC ground loops between equipment. For further versatility of operation, there is also a 1/4" (6.3mm) unbalanced line-level output.

The AV-1A's construction and components are top-grade throughout, ensuring trouble-free operation in educational, institutional and A/V rental settings. The “Uni-box™ construction” enclosure is formed of extruded aluminum side channels and 16-gauge steel top, bottom and end plates and is designed to protect switches and connectors from accidental damage. The use of steel also provides excellent magnetic shielding for the transformer from 60Hz AC hum fields. The finish is durable black textured powder coat on the end plates and the side channels are black anodized aluminum. Easily readable control and connector identification graphics are incorporated into a durable Lexan® overlay on the top panel. The uniquely slotted side channels allow for stacking on top or strapping side-to-side of virtually any number of Pro Co Monoface devices using the Uni-box™ construction.

Controls

INPUT:

1/4" (6.3mm) T/R/S phone, 2 RCA's and 3.5 mm T/R/S mini-jack wired in parallel accept signals from unbalanced line-level or speaker-level sources such as computers, audio and video tape recorders, movie projectors and DVDs.

PAD IN/OUT:

HI position inserts 20 dB pad for use with high-level (+4) line output or speaker-level sources not requiring loads (such as most solid-state equipment). LO position bypasses pad.

LINE/SPKR:

SPKR position inserts 20 dB pad, low-pass filter (-3 dB @ 8 kHz, 6 dB/octave) and 16 ohm 5 watt load resistor between INPUT and transformer. This allows the AV-1A to be used with older (especially tube-type) equipment requiring a speaker or similar load to avoid output stage damage. LINE position bypasses pad and disconnects load resistor for use with sources such as radio, cassette or DVD outputs.

LINE OUTPUT:

1/4" (6.3mm) phone jack takes signal after SPKR/LINE and HI/LO switches and provides unbalanced line-level source to feed suitable inputs of tape recorders, DVDs, sound systems, etc. Recommended load impedance: 100 kohm.

MIC-LEVEL OUTPUT:

Male 3-pin XLR-type connector provides floating transformer-isolated low-impedance output to feed suitable mixer or PA amplifier input. Recommended load impedance: 1.0 kohm.

GND/LIFT:

GND position connects INPUT/LINE OUTPUT and MIC-LEVEL OUTPUT grounds together. LIFT position “floats” MIC-LEVEL OUTPUT. Used to reduce hum and buzz by eliminating ground loops and providing proper grounding for various conditions.

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Typical Performance

All measurements made with 0 ohm source feeding INPUT and 1.0 kohm load on MIC LEVEL OUTPUT to simulate typical "real world" projector and mic preamp. 0 dBv ref. = .775 volt.

Frequency Response:

20 Hz-20 kHz, +/- .5 dB @ -15 dBv output.
 -3 dB @ approximately 85 kHz.
 SPKR mode introduces 6 dB/octave attenuation above 8.0 kHz.

Total Harmonic Distortion:

Less than .03% 20 Hz-20 kHz @ -30 dBv output.
 Less than .1% 30 Hz-20 kHz @ -15 dBv output.
 Less than .25% 20 Hz-20 kHz @ -15 dBv output.

Input Impedance:

Greater than 130 kohm @ 1.0 kHz (LO mode).
 Approximately 82 kohm (HI mode).
 Approximately 16 ohm (SPKR mode).
 Nominal source impedance is 0 ohm. SPKR mode loads source with 16 ohm 5.0 watt dummy load.

Output Impedance:

Less than 200 ohm @ 1.0 kHz.
 Nominal load impedance is 1.0 kohm.

Voltage Stepdown:

Less than 22 dB @ 1.0 kHz (LO mode).
 HI and SPKR modes each attenuate signal by 20 dB.

Maximum Input Level @ 50 HZ FOR 1% THD:

+26 dBv (LO mode), +46 dBv (HI or SPKR modes), +66 dBv (HI and SPKR modes).

Engineering Specifications

The signal splitting/impedance matching unit shall be suitable for interfacing one (1) unbalanced high- or low-impedance source to one (1) balanced or floating low-impedance (1.0 kohm nominal) microphone preamplifier input. There shall be one (1) 1/4" (6.3mm) 2-conductor phone jack, two (2) RCA phono jacks, and one (1) 3.5 mm. T/R/S mini-jack wired in parallel to provide input for the source. There shall be a switchable 20 dB attenuator with a 16 ohm, 5.0 watt load resistor to accommodate speaker-level sources, with a filter to further attenuate high frequencies by 6 dB per octave above 8.0 kHz. There shall be a switchable 20 dB attenuator to accommodate line-level sources. There shall be (1) unbalanced 1/4" (6.3mm) phone jack to provide a line output from the attenuators. There shall be a transformer-isolated low-impedance output from a 3-pin male XLR-type connector. The transformer shall be a Pro Co DBT-1 Direct Box Transformer. The primary electrostatic shield shall be connected to the source input ground and to the enclosure. The secondary electrostatic shield shall be connected to pin 1 of the low-impedance XLR output. There shall be a ground-lift switch to allow the shields to be connected together or isolated as required. The XLR output connector shall be wired with pin 2 "hot" or "in-phase" with respect to the input, and pin 3 "cold" or "anti-phase".

The enclosure shall be constructed in the Pro Co "Uni-box™" design with 16-gauge steel black zinc finish top and bottom plates, 16-gauge black texture powder coated steel end plates and black anodized aluminum side channels. Control functions shall be identified by a printed Lexan® top panel overlay. Switches shall be of the miniature "rocker" type and shall be recessed. The enclosure shall be provided with two (2) miniature handles at each end (front and back) and four (4) non-conductive feet. The dimensions of the unit shall be 4.875" D x 4.375" W x 1.75" H (123.8mm D x 111.1mm W x 44.4mm H).

The signal splitting/impedance matching unit shall be a Pro Co Monolink AV-1A Audio Visual Interface.

The Pro Co DBT-1 Transformer

The DBT-1 is a carefully designed, custom-built impedance-matching transformer whose characteristics are optimized for use with high-impedance sources such as electric bass guitars. It is also very applicable to other unbalanced sources such as keyboard instruments.

Special winding techniques and a high-permeability (80% nickel) core lamination preserve full frequency response while minimizing signal losses and other "loading" effects. Separate electrostatic shields for primary (input) and secondary (output) windings reduce capacitive coupling of ground-borne electrical noise between stage amps and PA or recording mixers, eliminating annoying 60 Hz hum and buzz. The source impedance of the DBT-1 is very similar to that of a low-impedance microphone to ensure proper matching to the input circuitry of the mixer. The result is clean transient response (no overshoot or ringing) and low distortion even at low frequencies and high input levels.

