



On Stage  
with  
the Best

TradeTools™ **AV1A**  
AUDIO/VIDEO INTERFACE



BACK OF UNIT



FRONT OF UNIT

## FEATURES:

- » Better Sound from Computers and DVDs
- » Ideal for Meetings, Lectures and Presentations
- » Output is Transformer-isolated and includes a Ground/Lift Switch
- » Selectable Low-pass "Hiss" Filter
- » Offers Choice of Standard Connectors—No Adapters Needed
- » Properly Converts 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 TradeTools AV1A Audio-Visual Interface allows the line-or speaker level outputs of movie projectors, audio and video playback devices, 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 AV1A 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 AV1A 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 highfrequency 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 XLRtype

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 AV1A's construction and components are top-grade throughout, ensuring trouble-free operation in educational, institutional and A/V rental settings. Pro Co's "Uni-box" enclosure is formed of extruded aluminum side channels and 16-gauge steel top, bottom and end plates and is designed to protect it's switches and connectors from accidental damage. The use of steel also provides excellent magnetic shielding for the transformer from EM/RF 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 TradeTools devices using the Uni-box construction.

# 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) T/R/S phone jack, one (1) RCA phono jack, and one (1) 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) T/S 1/4" (6.3mm) phone jack to provide an unbalanced 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 "inphase" 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 flush-mounted. 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 TradeTools AV1A Audio Visual Interface.

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 and 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. Mu metal can and 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 (minimal overshoot or ringing) and low distortion even at low frequencies and high input levels.

# TYPICAL PERFORMANCE:

NOTES: 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:** < .03% 20 Hz-20 kHz @ -30 dBv output.  
< .1% 30 Hz-20 kHz @ -15 dBv output.  
< .25% 20 Hz-20 kHz @ -15 dBv output.

- VOLTAGE STEPDOWN:** < 22 dB @ 1.0 kHz (LO mode).  
PAD IN and SPKR modes each attenuate signal by 20 dB.
- INPUT IMPEDANCE:** > 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:** < 200 ohm @ 1.0 kHz.  
Nominal load impedance is >1.0 kohm.
- MAXIMUM INPUT LEVEL @ 50 HZ FOR 1% THD:**  
+26 dBv (PAD OUT mode), +46 dBv (PAD IN or SPKR modes), +66 dBv (PAD IN and SPKR modes).

# CONTROLS:

- 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 AV1A 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 VCR outputs.
- LINE OUTPUT:** 1/4" (6.3mm) phone jack takes signal after LINE/SPKR and PAD IN/OUT switches and provides unbalanced line-level source to feed suitable inputs of tape recorders, VCRs, 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.
- INPUT:** 1/4" (6.3mm) T/R/S phone, RCA and 3.5 mm T/R/S minijacks wired in parallel accept signals from unbalanced line-level or speaker-level sources.
- PAD IN/OUT:** PAD IN position inserts 20 dB pad for use with high-level (+4) line level inputs. PAD OUT position bypasses pad.

**PRO CO MODEL: AV1A**

**DIMENSIONS ..... 4.38" W x 4.88" D x 1.75" H**  
**111.1mm W x 123.8mm D x 44.4mm H**  
**WEIGHT ..... 1.00 lb/0.46 kg**  
**SHIPPING WEIGHT ..... 2.00 lb/0.92 kg**