



FRONT OF UNIT



BACK OF UNIT

FEATURES:

- » Floating Transformer-Balanced XLR Output for Maximum Isolation
- » 4 Independent Channels for 4 Keyboards, Drum Machine Outputs, etc.
- » 3 IN/OUT Jacks per Channel for Convenient Loop-Thru
- » LINT Mode Handles Signals to +34 dBv
- » GND/LIFT Switch Eliminates Hum and Buzz
- » Rack-mounted “Uni-box” Construction for Superior Protection and Shielding
- » Flush-mounted Switches and Connectors Resist Damage
- » Passive Design Requires No Batteries or Phantom Power.

DESCRIPTION:

The DB4A provides four discrete “direct-box” channels in a convenient single space (1 3/4” , 44.45mm) rack-mounting package. Ideal for the multi-keyboardist, it is equally well suited to any application requiring the interface of unbalanced high-impedance equipment and balanced low-impedance mixer inputs.

Unlike the traditional “mic on the speaker” approach, the direct approach delivers the clarity and punch that a modern sound demands. The full richness and character of the instruments is preserved because the distortion and coloration of speakers and microphones has been eliminated.

The versatile design of the DB4A allows easy integration with any high-quality audio system. Three parallel-connected IN/OUT jacks for unbalanced signals make “patching in” at virtually any stage of the signal path a simple task. Signals may be taken straight from the instruments (and effects devices) themselves, or from sub-mixer outputs (if you have

to run out of mixer channels). Of course, multiple DB4A’s can be used when separate outputs from each instrument or effect are needed.

The DB4A’s rugged 16-gauge steel and aluminum “Uni-box” construction enclosure is finished in a durable black texture powder coat finish with black anodized aluminum side channels. Easy-to-read control graphics are incorporated into the Lexan® front and back panel overlays. Inside, DBT-P transformers combine superb audio quality with unsurpassed noise rejection. The DB4A can be mounted in any standard 19” (482.6mm) rack.

ENGINEERING SPECIFICATIONS:

The signal splitting/impedance matching unit shall be suitable for interfacing four (4) unbalanced high- or low-impedance sources to four (4) balanced or floating low-impedance (1.0 kohm nominal) microphone preamplifier inputs. There shall be four (4) channels with features as follows: There shall be one (1) 1/4" (6.3mm) 2-Conductor phone jack linked in parallel to two (2) rear-panel 1/4" (6.3mm) 2-Conductor phone jacks. Any of these may be used as an input or as a loop-through output as required, as long as only one (1) source is connected to each channel. There shall be a front-panel switch for a 20 dB attenuator to accommodate line-level sources. There shall be a transformer-isolated low-impedance output from a front-panel 3-pin male XLR-type connector. The transformer shall be a Pro Co DBT-P Direct Box Transformer. The primary electrostatic shield shall be connected to the source input ground. 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". There shall be a connection between the enclosure and the source ground of Channel 1. If the enclosure is mounted in a properly grounded 19" EIA rack this connection may be removed. There shall be no connection between the enclosure and Channels 2, 3 and 4. The enclosure shall be constructed in the Pro Co's "Uni-box" enclosure with 16-gauge steel black zinc finish top and bottom plates, 1/8" black anodized aluminum front plates, back plates and side channels.

Control functions shall be identified by a printed Lexan® front and back panel overlay. Switches shall be of the miniature "rocker" type and shall be flush-mounted. The enclosure shall be provided with 2 miniature handles mounted on the front plate. The enclosure shall be suitable for standard 19" EIA rack mounting. The dimensions of the unit shall be approximately 4-3/4" D by 19"W by 1-3/4"H. (120.7mm D by 482.6mm W by 44.5mm H).

The signal splitting/impedance matching unit shall be a Pro Co TradeTools DB4A Quad Direct Box.

The DBT-P 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. Mu metal can and 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-P 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 IN/OUT and 1.0 kohm load on LO-Z OUTPUT to simulate typical "real world" instrument pick-up and mic preamp. 0 dBv ref. = .775 volt.

- FREQUENCY RESPONSE:** 20 Hz-20 kHz, +/- .5 dB @ -15 dBv output.
 -3 dB @ approximately 85 kHz.
 FILTER mode introduces 6 dB/octave attenuation above 4.0 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.
- PHASE RESPONSE:** < -18 degrees @ 20 kHz (ref. 1.0 kHz).
- RISE TIME:** < 4.5 microseconds (2.0 kHz square wave, 10%-90%).
- VOLTAGE STEPDOWN:** < 22 dB @ 1.0 kHz (INST mode).
 SPKR mode attenuate signal by 20 dB.

- INPUT IMPEDANCE:** > 130 kohm @ 1.0 kHz (INST mode).
 > 105 kohm @ 10 kHz (INST mode).
 Nominal source impedance is 20 kohm.
 Approximately 8.2 kohm (SPKR mode).
 Nominal source impedance is 0 ohm.
- OUTPUT IMPEDANCE:** < 210 ohm @ 1.0 kHz.
 < 215 ohm @ 10 kHz.
 Nominal load impedance is 1.0 kohm.
- MAXIMUM INPUT LEVEL @ 50 HZ FOR 1% THD:**
 +16 dBv (INST mode), +34 dBv (LINE mode) @ 20 Hz.
 +21 dBv (INST mode), +41 dBv (LINE mode) @ 30 Hz.
 +26 dBv (INST mode), +46 dBv (LINE mode) @ 50 Hz.

CONTROLS:

- IN/OUT:** Three phone jacks wired in parallel for signal input and "loop-through." For convenience there is a front-panel jack and a pair of rear-panel jacks (for use with rack-mounted equipment). Any IN/OUT jack can be used as an input from a source or as a loop-through output as required.
 (Note: The DB4A is not a mixer and should not be used to mix signals together. One signal source should be connected to each channel.)
 Input impedance: INST-greater than 100 kohm; LINE-approx. 8 kohm.
 Handle s signals of up to 69V RMS.
- LO-Z OUTPUT:** Male 3-pin XLR-type connector provides balanced floating low-impedance output (pin 2 hot). Connect to mixing board microphone channel input. Recommended load impedance: 1.0 kohm.

- LINE/INST:** LINE position inserts 20 dB pad between the three IN/OUT jacks and the DBT-P Transformer for increased level handling capability. Also provides proper source impedance to optimize frequency and transient response. INST position bypasses pad and is used for high-impedance sources such as guitars, basses and some older keyboards. (LINE/INST switch affects only LO-Z OUTPUT level.)
- GND/LIFT:** GND position connects INPUT and LO-Z OUTPUT grounds together. LIFT position "floats" LO-Z OUTPUT. Used to reduce hum and buzz by eliminating ground loops and providing proper grounding for various conditions.

