



BACK OF UNIT



FRONT OF UNIT

FEATURES:

- » Floating Transformer-Balanced XLR Output for Maximum Isolation
- » SPKR Mode Handles Amplifiers Up to 600W RMS*
- » HI CUT Filter Reduces High Frequency Hiss
- » GND/LIFT Switch Eliminates Hum and Buzz
- » Rugged "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 Pro Co Model DB1 is a simple passive direct box that offers clean, reliable performance. It can be used for nearly any instrument or signal source, from electric bass, keyboards and drum machines to sub-mixers and external speaker outputs*.

The DB1 preserves the "punch" and clarity of the sound that is often lost when mic'ing a speaker, while eliminating the leakage, distortion and coloration. The signal delivered to the P.A. or studio mixer is crisp and clean - a vital element in retaining the full depth and brilliant sound of digital instruments such as synthesizers and digital drum machines.

The DB1 may be inserted into the signal path at virtually any stage required. For instance, a bass guitar signal can be "taken direct" from the instrument for a clean, natural tone, from a preamp or line output for a punchier or "equalized" sound, or from the speaker output of the amp if a dirtier

"edge" is desired. For stereo or multi-channel applications such as Keyboards or digital drums we recommend the DB2 or DB4A. The four-channel, rack-mountable DB4A Quad Direct Box is highly recommended for multi-channel applications.

Built for the road, but equally at home in the recording studio, the DB1's rugged 16-gauge steel and aluminum "Uni-box" enclosure is finished in a durable black texture powder coat finish with black anodized aluminum side channels. 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. Easy to read control graphics are incorporated into the Lexan® top panel overlay.

*properly loaded speaker output

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 two (2) 1/4" (6.3mm) 2-conductor phone jacks wired in parallel to provide input and loop-through output for the source. There shall be a switchable 20 dB attenuator to accommodate line- or speaker-level sources*, with a switchable filter to further attenuate high frequencies by 6 dB per octave above 4.0 kHz. 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 the enclosure. 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" and pin 3 "cold" or anti-phase" with respect to the input.

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 DB1 Direct Box.

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 EM/RF and ground noise. 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 a 20 kohm 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:** < 200 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 (SPKR mode) @ 20 Hz.
 +21 dBv (INST mode), +41 dBv (SPKR mode) @ 30 Hz.
 +26 dBv (INST mode), +46 dBv (SPKR mode) @ 50 Hz.

CONTROLS:

- INPUT:** 1/4" (6.3mm) phone jack accepts signals from instrument or other source. Input impedance-greater than 100 kohm; SPKR-approx. 8 kohm. Handles signals of up to 69V RMS (approx. 600 watts across an 8 ohm load).
- OUTPUT:** 1/4" (6.3mm) phone jack provides "loop-through" parallel connection from input jack. Used when inserting DB1 between instrument and amplifier.
- HI CUT/FLAT:** Switch is only functional when SPKR/ INST switch is set to SPKR. HI CUT position inserts a low-pass filter (-3 dB @ 4 kHz, 6 dB. Octave) to simulate frequency response of a typical loudspeaker. Used when source is guitar or bass amplifier speaker output. FLAT position bypasses filter. (HI CUT affects LO-Z OUTPUT response only.)

- 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.
- SPKR/INST:** SPKR position inserts 20 dB pad between INPUT and DBT-1 transformer for increased level handling capability (used for speaker- or line-level sources). INST position bypasses pad. (SPKR/INST switch affects LO-Z OUTPUT level only.)
- 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.

PRO CO MODEL: DB1

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