



## FEATURES:

- » Provides 2-Way Split for Line Level Outputs
- » True Floating Transformer Isolation
- » Isolates Unbalanced Line-Level Outputs
- » 8 Channels in Single Rack Space
- » Connects with Phoenix COMBICON™ Plug-in Screw Connectors
- » Ideal for Portable and Permanent Sound Systems
- » Allows Assembly of Economical Expandable Splitting System
- » Rugged “Uni-Box” construction provides protection and EMI/RMI shielding

## DESCRIPTION:

The Pro Co TradeTools LS82 Eight-Channel Line Splitter splits the signals from each of eight line-level sources into two outputs, as well as provides eight high-quality 1:1 line-level output transformers for applications requiring the high degree of electrical isolation only transformers can provide. The primary applications for the LS82 are in sound reinforcement systems where it may be necessary to break ground loops between pieces of equipment connected with unbalanced lines, as well as feeding two inputs with one source. For instance, the LS82 can be used to float the unbalanced outputs of an active crossover unit that must drive long cables connected to power amplifier inputs while still offering the direct output for nearfield monitors.

In such complex systems grounding problems can cause both unacceptable noise levels and severe shock hazards. Transformer isolation in such situations minimizes interference from SCR lighting dimmers, radio transmitters and 60 Hz AC power wiring. Furthermore, the common-mode voltage range of a transformer makes it far more forgiving of improper connections or fault conditions than any electronically balanced or “differential” transformerless circuit. This makes transformer-floated outputs essential for safeguarding portable sound reinforcement systems and installations.

The LS82 is fitted with Phoenix COMBICON plug-in screw connectors for LINE IN, DIRECT OUT, and ISO OUT so hookup requires only bare conductors and a screwdriver.

The use of the Pro Co LOT-P transformer allows the LS82 to provide floating, low-impedance outputs with wide, flat frequency response, ultra-low distortion, and no ringing or overshoot to degrade transient response.

The GND/LIFT switch provides isolation and buzz-free operation in virtually any environment. The LS82’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, the specially designed transformers combine superb audio quality with unsurpassed noise rejection. The LS82 can be mounted in any standard 19” (482.6mm) rack. Top-quality connectors and switches provide trouble-free service even in abusive situations such as remote broadcast and recording operations. The rack-mounting design allows the user to assemble a conveniently packaged expandable splitting system that combines top-quality audio performance and isolation with an economical price.

# ENGINEERING SPECIFICATIONS:

The output transformer isolation unit shall be suitable for interfacing each of eight (8) unbalanced or electronically balanced low-impedance (0 ohm nominal) line-level signal sources to two (2) unbalanced, balanced, differential or floating low- or bridging-impedance (600 ohm nominal) line level input. There shall be eight (8) channels with features as follows: There shall be a Phoenix COMBICON™ plug-in screw connector for input from the source. There shall be a parallel or direct output from a Phoenix COMBICON plug-in screw connector. There shall be one (1) transformer-isolated low-impedance output from a Phoenix COMBICON plug-in screw connector. The transformer shall be a Pro Co LOT-P Line Output Transformer. There shall be a ground-lift switch for the isolated output to allow the input and output grounds to be connected or isolated as required.

The enclosure shall be the Pro Co "Uni-box" rack design 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 miniature dip switches 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 line splitting unit shall be a Pro Co TradeTools LS82 Line Splitter.

The LOT-P is a carefully designed, custom-built line output transformer which is very useful in a variety of applications requiring truly floating transformer isolation of unbalanced or electronically balance line-level outputs. Its 48% nickel core lamination optimizes it for use with zero-ohm sources such as op-amp-based outputs. The LOT-P provides a broad-band, low-distortion floating output with excellent transient response and minimal insertion loss.

# TYPICAL PERFORMANCE:

NOTES: All measurements made with 0 ohm source feeding LINE IN and 600 ohm load on ISO OUT to simulate typical "real world" source and load.  
0 dBv ref. = .775 volt.

Phase response and rise time measurements are essentially those of the driving amplifier used rather than those of the LOT-P transformer.

**FREQUENCY RESPONSE:** 20 Hz-20 kHz, +/- .5 dB @ 0 dBv output.  
-3 dB @ approximately 85 kHz.

**TOTAL HARMONIC DISTORTION:** < .25% 20 Hz-20 kHz @ 0 dBv output.  
< .5% 30 Hz-20 kHz @ +18 dBv output.  
< 1% 20 Hz-20 kHz @ +18 dBv output.

**PHASE RESPONSE:** <-3 degrees @ 20 kHz (ref. 1.0 kHz).

**RISE TIME:** < 4.5 microseconds (2.0 kHz square wave, 10%-90%).

**INPUT IMPEDANCE:** > 680 ohm @ 1.0 kHz.  
> 680 ohm @ 10 kHz.  
Nominal source impedance is 0 ohm.

**OUTPUT IMPEDANCE:** < 120 ohm @ 1.0 kHz.  
< 120 ohm @ 10 kHz.  
Nominal output impedance is 600 ohm.

**VOLTAGE LOSS:** < 2.0 dB @ 1.0 kHz.  
**MAXIMUM INPUT LEVEL FOR 1% THD:**  
+20 dBv @ 20 Hz.  
+24 dBv @ 30 Hz.  
+30 dBv @ 50 Hz.

# CONTROLS:

**LINE IN:** Phoenix COMBICON plug-in screw connector accepts signals from low-impedance (0 ohm nominal) line-level source. Input impedance (with 600 ohm load on ISO OUT): approx. 680 ohm.

**ISO OUT:** Phoenix COMBICON plug-in screw connector provides floating transformer-isolated low-impedance output to feed line-level input. Recommended load impedance: 600 ohm

**DIRECT OUT:** Phoenix COMBICON plug-in screw connector wired in parallel with LINE IN provides signal to feed an additional input.

**GND/LIFT:** GND position connects pin 1 of LINE IN to pin 1 of ISO OUT. LIFT position "floats" ISO OUT. Used to reduce hum and buzz by eliminating ground loops and providing proper grounding for various conditions.

**PRO CO MODEL: LS82**

(1) OF (8) CHANNELS

**DIMENSIONS ..... 4.75" D x 19.0" W x 1.75" H**  
**120.7mm D x 482.6mm W x 44.5mm H**  
**WEIGHT ..... 4.7 lb/2.14 kg**  
**SHIPPING WEIGHT ..... 5.00 lb/2.25 kg**

NOTE: ODD CHANNELS SHOWN EVEN CHANNELS MAGNETIC POLARITY REVERSED.