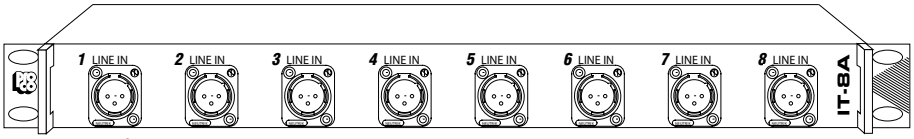
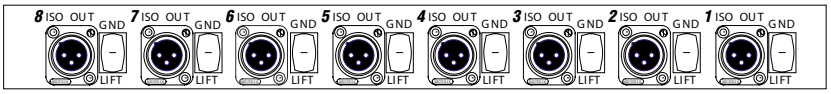
MultiLink™ Series IT-8A

8-Channel Isolation Transformer Unit Technical Information



Front of Unit



Back of Unit

IT-8A Features

- Isolates Unbalanced Line-Level Outputs
- True Floating Transformer Isolation
- 8 Channels in Single Rack Space
- Professional XLR Connectors
- Ideal for Portable and Permanent Sound Systems
- Rugged "Uni–box™" Construction for Super Strength and Shielding

Description

The Pro Co Multilink IT-8A Isolation Transformer Unit 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 IT-8A are in sound reinforcement systems where it may be necessary to break ground loops between pieces of equipment connected with unbalanced lines. For instance, the IT-8A can be used to float the unbalanced outputs of an active crossover unit that must drive long cables connected to power amplifier inputs. 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 "active," "electronic" or "differential" transformerless circuit. This makes transformer-floated outputs essential for "goof-proofing" portable sound reinforcement systems and installations.

The IT-8A is fitted with standard 3-pin XLR-type connectors for LINE IN and ISO OUT, so hookup typically requires only standard microphone cables.

The use of the Pro Co LOT-1 ransformer allows the IT-8A to provide floating, low-impedance outputs with wide, flat frequency response, ultra-low distortion, and no ringing or overshoot to degrade transient response. The LOT-1's dual primary windings allow it to be reconfigured for 1:2 operation if required, providing 6 dB of voltage step-up. Individual GND/LIFT switches provide isolation and buzz-free operation in virtually any environment.

The IT-8A'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 IT-8A 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 isolation system that combines top-quality audio performance with an economical price.

Controls

LINE IN:
Female 3-pin XLR-type connector accepts signal from low-impedance (0 ohm nominal) line-level source. Input impedance (with 600 ohm load on ISO OUT): approx. 680 ohm.

ISO OUT:
Male 3-pin XLR-type connector provides floating transformer-isolated low-impedance output to feed line-level input. Recommended load impedance: 600 ohm

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.

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Typical Performance

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. LOT-1 transformers configured for 1:1 operation. 0 dBv ref. = .775 volt.

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

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

PHASE RESPONSE:
Less than -3 degrees @ 20 kHz (ref. 1.0 kHz).

RISE TIME:
Less than 4.5 microseconds (2.0 kHz square wave, 10%-90%).
Phase response and rise time measurements are essentially those of the driving amplifier used rather than those of the LOT-1 transformer.

INPUT IMPEDANCE:
Greater than 680 ohm @ 1.0 kHz.
Greater than 680 ohm @ 10 kHz.
Nominal source impedance is 0 ohm.

OUTPUT IMPEDANCE:
Less than 120 ohm @ 1.0 kHz.
Less than 120 ohm @ 10 kHz.
Nominal output impedance is 600 ohm.

VOLTAGE LOSS:
Less than 2.0 dB @ 1.0 kHz.

MAXIMUM INPUT LEVEL FOR 1% THD:
+20 dBv @ 20 Hz.
+24 dBv @ 30 Hz.
+30 dBv @ 50 Hz.

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 one (1) 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 3-pin female XLR-type connector for input from the source. There shall be a transformer-isolated low-impedance output from a 3-pin male XLR-type connector. The transformer shall be a Pro Co LOT-1 Line Output Transformer. There shall be a ground-lift switch to allow the input and output grounds (pin 1) to be connected together or isolated as required.

The enclosure shall be constructed in the Pro Co "Uni–box™" 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 of the miniature "rocker" type and shall be recessed. 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).

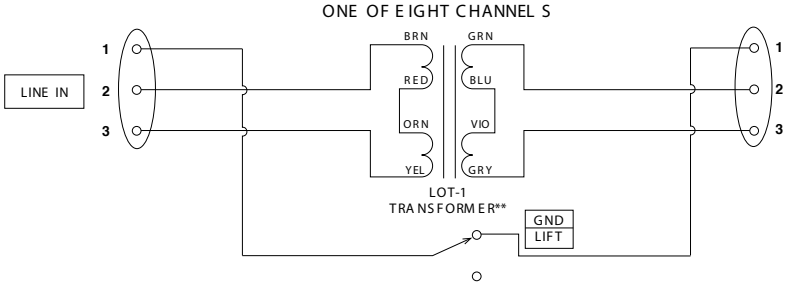
The output transformer isolation unit shall be a Pro Co Multilink IT-8A Isolation Transformer Unit.

The Pro Co LOT-1 Transformer

The LOT-1 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.

The LOT-1 consists of four windings, with the primaries connected in series for 1:1 operation or in parallel to provide 1:2 (step-up) operation into 600 ohm loads. Its 48% nickel core lamination optimizes it for use with zero-ohm sources such as op-amp-based outputs. The LOT-1 provides a broad-band, low-distortion floating output with excellent transient response and minimal insertion loss.

Pro Co Model IT-8A



Dimensions

Weight.....6.0 lbs.
2.59 kg.
Shipping
Weight.....5.70 lbs.
2.73 kg.