



## FEATURES:

- » Provides 3-Way Split for Low-Impedance Microphone
- » 8 Splitter Channels in Single Rack Space
- » Phantom Power Buss for Powering Condenser Mics from an External Power Source
- » Allows Assembly of Economical Expandable Splitting System
- » Great for Musicians' Monitoring and Remote Recording and Broadcast
- » Connects with Phoenix COMBICON™ Plug-in Screw Connectors
- » High-Quality Transformer-Isolated Output
- » Rugged "Uni-Box" construction provides protection and EMI/RFI shielding

## DESCRIPTION:

The Pro Co TradeTools MS83P Eight-Channel Mic Splitter splits the signals from each of eight low-impedance microphones (or similar sources) into three outputs, enabling three microphone preamplifiers to be fed from one source. Additionally, the MS83P features a phantom power buss to facilitate the powering of condenser microphones from an external power supply. This allows microphone patching without fear of transients due to the interruption of phantom power, often a problem when the console power supply is used.

The primary application for the MS83P is in large sound reinforcement systems, where the P.A. system microphones must also be fed to a stage monitor system and a broadcast or remote recording mixer. In such complex systems, grounding problems can cause both unacceptable noise levels and severe shock hazards. Transformer isolation in such situations minimizes interference from EMI/RFI and ground loops. The transformer-isolated feeds retain the advantage of common-mode noise rejection inherent in the use of balanced lines.

The MS83P is fitted with Phoenix COMBICON plug-in screw connectors for MIC IN, DIRECT OUT, and ISO OUT 1 and 2, so hookup requires only bare conductors and a screwdriver.

The use of the Pro Co MBT-2 transformer allows the MS83P to provide a floating, low-impedance output with wide, flat frequency response, ultra-low distortion, and minimal ringing or overshoot to degrade transient response. The transformer's triple electrostatic shields and GND/LIFT switches provide isolation and buzz-free operation in virtually any environment.

The MS83P'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 MS83P 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 microphone signal splitting unit shall be suitable for interfacing each of eight (8) balanced or floating low-impedance (150 ohm nominal) microphones or similar signal sources to three (3) balanced or floating low-impedance (1.0 kohm nominal) microphone preamplifier inputs. 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 two (2) transformer-isolated low-impedance outputs from Phoenix COMBICON plug-in screw connectors. The transformer shall be a Pro Co MBT-2 Microphone Bridging Transformer. The primary electrostatic shield shall be connected to pin 'G' of the source input and direct output COMBICON connectors. The secondary electrostatic shields shall be connected to pin 'G' of their respective transformer-isolated COMBICON connector outputs. There shall be a ground-lift switch for the isolated output to allow the secondary shields to be connected to the primary shield or isolated as required.

There shall be a phantom power buss accessible via 2-pole Phoenix COMBICON plug-in screw connectors. The phantom power buss shall be suitable for powering condenser microphones from an external phantom power supply.

The enclosure shall be the Pro Co "Uni-box" rack-mount 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 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 microphone signal splitting unit shall be a Pro Co TradeTools MS83P Mic Splitter.

The MBT-2 is a carefully designed, custom-built 1:1:1 microphone bridging transformer whose characteristics are optimized for use with balanced low-impedance microphones or similar sources. 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 each secondary (output) winding reduce capacitive coupling of ground-borne electrical noise between main, stage monitor and recording or broadcast feed mixers, eliminating annoying 60-Hz hum and buzz. The source impedance of the MBT-2 is very similar to that of a low-impedance microphone to ensure proper matching to the input circuitry of the mixers. The result is clean transient response (minimal overshoot or ringing) and low distortion even at low frequencies and high input levels.

# TYPICAL PERFORMANCE:

All measurements made with 150 ohm source feeding MIC IN and 1.0 kohm loads on ISO OUTS to simulate typical "real world" microphone and mic preamps. 0 dBv ref. = .775 volt.

- FREQUENCY RESPONSE:** 20 Hz-20 kHz, +/- .25 dB @ -15 dBv output.  
-3 dB @ approximately 140 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:** < -13 degrees @ 20 kHz (ref. 1.0 kHz).
- RISE TIME:** < 2.4 microseconds (2.0 kHz square wave, 10%-90%).

- VOLTAGE LOSS:** < 2.5 dB @ 1.0 kHz.
- INPUT IMPEDANCE:** > 570 ohm @ 1.0 kHz.  
> 570 ohm @ 10 kHz.  
Nominal source impedance is 150 ohm.
- OUTPUT IMPEDANCE:** < 255 ohm @ 1.0 kHz.  
< 270 ohm @ 10 kHz.  
Nominal output impedance is 1.0 kohm.
- MAXIMUM INPUT LEVEL FOR 1% THD:** 0 dBv @ 20 Hz.  
+4 dBv @ 30 Hz.  
+8 dBv @ 50 Hz.

# CONTROLS:

- MICROPHONE INPUT** Phoenix COMBICON plug-in screw connector accepts signals from low-impedance (150 ohm nominal) microphones or similar sources. Input impedance (with 1.0 kohm loads on DIRECT and ISO OUTS) is approximately 333 ohm.
- DIRECT OUTPUT:** Phoenix COMBICON plug-in screw connector wired in parallel with MIC IN provides signal to feed mixer input.
- ISOLATED OUTPUTS:** Phoenix COMBICON plug-in screw connectors provide floating transformer isolated low-impedance outputs to feed mixer inputs. Recommended load impedances: 1.0 kohm.

- GND/LIFTS:** GND position connects pin 1 of MIC IN/DIRECT OUT to pin 1 of ISO OUTS. LIFT position "floats" ISO OUTS. Used to reduce hum and buzz by eliminating ground loops and providing proper grounding for various conditions.
- +48V IN/OUT:** 2-pole Phoenix COMBICON plug-in screw connectors provide input and loop-through output for external phantom power supply.

**PRO CO MODEL: MS83P**

**DIMENSIONS ..... 4.75" D x 19" W x 1.75" H**  
**120.7mm D x 482.6mm W x 44.4mm H**

**WEIGHT ..... 3.60 lb/1.62 kg**

**SHIPPING WEIGHT ..... 5.00 lb/2.25 kg**

NOTE: ODD CHANNELS SHOWN EVEN CHANNELS MAGNETIC POLARITY REVERSED.