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FRONT OF UNIT

## FEATURES:

- » Combines 2 Low-Z Microphone Signals
- » Ideal for Recording and Live Sound
- » Use for Backup Microphones at Press Conferences and Speeches
- » Connects with Standard Microphone Cables
- » Polarity Reversing Switch Corrects Phase Cancellation
- » High-Quality Transformer-Isolated Output
- » Rugged “Uni-Box” construction provides protection and EMI/RFI shielding

## DESCRIPTION:

The Pro Co TradeTools MC2 Mic Combiner passively combines the signals from two low-impedance microphone (or similar sources) into a single output. It is a handy “band-aid” for situations where the number of microphones required exceeds the number of mixer channels available, but separate equalization and level control for every microphone is not required. In a musical or recording situation, the MC2 can combine mics from sources like dual bass drums, percussion, stereo guitar amps, etc. Commercial sound uses include combining dual mics on a public speaker for redundancy and handling extra mics for audience participation at meetings. The MC2’s transformer isolation minimizes interference from EMI/RFI and ground loops, retaining the advantages of common-mode noise rejection inherent in the use of balanced lines.

The MC2 is fitted with standard 3-pin XLR-type connectors for INPUT 1 and 2 and OUTPUT, so hookup requires only

standard microphone cables. One input is provided with a REV/POL switch to change its polarity. This is very useful for correcting acoustical or electrical phase cancellation problems such as poor mic placement. The use of the Pro Co MBT-2 transformer allows the MC2 to provide a floating, lowimpedance output with wide, flat frequency response, ultra-low distortion, and no ringing or overshoot to degrade transient response.

The MC2’s ruggedly constructed “Uni-box” enclosure is formed of extruded aluminum side channels and 16-gauge steel top, bottom and end plates and is designed to protect switches and connectors from accidental damage. The use of steel also provides excellent magnetic shielding for the transformer from EM/RF fields. Top-quality connectors and switches provide troublefree service even in abusive situations such as remote broadcast and recording operations.

# ENGINEERING SPECIFICATIONS:

The microphone signal combining unit shall be suitable for interfacing two (2) balanced or floating low-impedance (150 ohm nominal) microphone or similar signal sources to one (1) balanced or floating low-impedance (1.0 kohm nominal) microphone preamplifier input. There shall be two (2) 3-pin female XLR-type connectors for inputs from the sources. There shall be a transformer-isolated lowimpedance output from a 3-pin male XLR-type connector. The transformer shall be a Pro Co MBT-2 Microphone Bridging Transformer. There shall be a polarity-reversing switch to interchange the connections between pins 2 and 3 of input connector 2 and the transformer winding as required.

The enclosure shall be 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 microphone signal combining unit shall be a Pro Co TradeTools MC2 Mic Combiner.

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 (including the Pro Co DB-1 and DB-4 Direct Boxes). 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:

NOTE: All measurements made with 150 ohm sources feeding INPUTS and 1.0 kohm load on OUTPUT to simulate typical "real world" microphone and mic preamp. 0 dBv ref. = .775 volt.

NOTE: Phantom power (if required) must be supplied by suitable power supply connected directly to microphones before MC2 INPUTS.

- FREQUENCY RESPONSE:** 20 Hz-20 kHz, +/- .5 dB @ -15 dBv output.  
-3 dB @ approximately 230 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.

- VOLTAGE LOSS:** < 7.0 dB @ 1.0 kHz.
- INPUT IMPEDANCE:** > 235 ohm @ 1.0 kHz.  
> 185 ohm @ 10 kHz.  
Nominal source impedance is 150 ohm.
- OUTPUT IMPEDANCE:** < 180 ohm @ 1.0 kHz.  
< 300 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:

- INPUTS:** Female 3-pin XLR-type connectors accept signals from low-impedance (150 ohm nominal) microphones or similar sources. Input impedance (with 1.0 kohm load on OUTPUT): approx. 150 ohm.
- OUTPUT:** Male 3-pin XLR-type connector provides floating transformer-isolated low impedance output to feed mixer input. Recommended load impedance: 1.0 kohm.

- REV/POL:** Reverses polarity of INPUT 2 to compensate for phase cancellation from acoustical conditions or mic placement, or provide special effects.

