

### DESCRIPTION:

The CBT-1A 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. 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 EMI/RFI and ground noise. The source impedance of the CBT-1A 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.

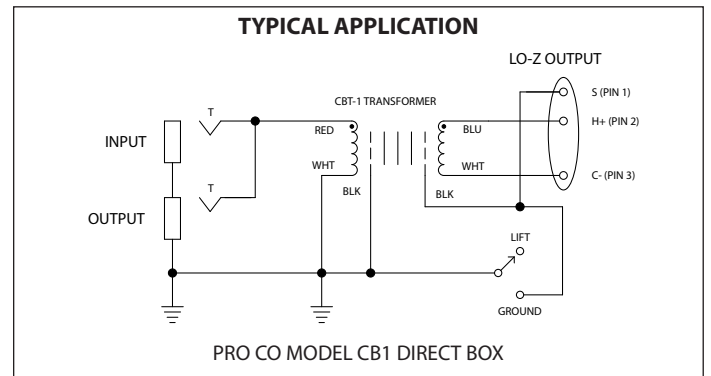
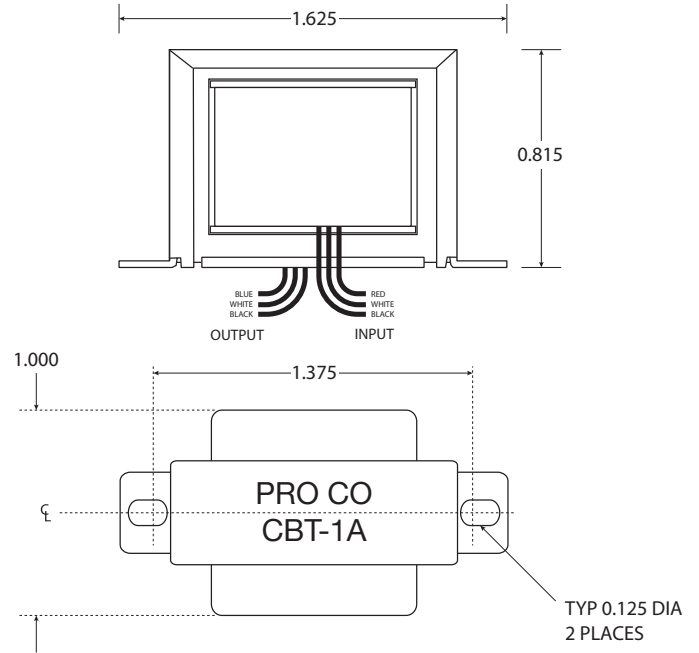
### PHYSICAL CHARACTERISTICS

- PACKAGE:** Open channel frame
- TERMINATION:** 4" (100 mm) 24 AWG tinned copper, color-coded leads
- DIMENSIONS:** 1.625" L x 1.000" W x 0.815" H  
(41.3 mm L x 25.4 mm W x 20.7 mm H)
- MOUNTING:** 2 holes, 0.125" (3.6 mm) dia, 1.375" (34.9mm) centers

### TYPICAL PERFORMANCE:

All measurements made with 20 kohm source and 1.0 kohm load to simulate typical "real world" instrument pickup and mic preamps.  
0 dBv ref. = .775 volt.

- VOLTAGE LOSS:** < 2.2 dB @ 1.0 kHz.
- INPUT IMPEDANCE:** > 25 kohm @ 1.0 kHz.  
> 22 kohm @ 10 kHz.  
Nominal source impedance is 20 kohm.
- SECONDARY SOURCE IMPEDANCE:** < 160 ohm @ 1.0 kHz.  
< 167 ohm @ 10 kHz.  
Nominal output impedance is 1.0 kohm.
- 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.
- MAX INPUT LEVEL FOR 1% THD:** +14 dBv @ 20 Hz.  
+19 dBv @ 30 Hz.  
+24 dBv @ 50 Hz.
- FREQUENCY RESPONSE:** -0.40 dB @ 20 Hz  
-0.17 dB @ 20 kHz  
-2.00 dB @ 85 kHz.
- PHASE RESPONSE:** < -18 degrees @ 20 kHz (ref. 1.0 kHz).
- RISE TIME:** < 5.5 μ Sec. (2.0 kHz square wave, 10%-90%).
- OVERSHOOT:** < 1%
- COMMON-MODE VOLTAGE (MAXIMUM):** > 1500V RMS
- COMMON MODE REJECTION RATIO:** > 80 dB @ 1.0 kHz
- DCR (Primary):** 1.70 kohm
- DCR (Secondary):** 30 ohm



### GENERAL CHARACTERISTICS

- URNS RATIO:** 11.55:1 ± 20%
- IMPEDANCE RATIO:** 20 kohm:150 ohm.
- PRIMARY SOURCE IMPEDANCE:** 20.0 kohm (typical instrument pickup)
- SECONDARY LOAD IMPEDANCE:** 1.0 kohm (typical microphone preamp)
- FARADAY SHIELD:** 2 shields with separate leads
- CORE MATERIAL:** 80% nickel alloy
- MAXIMUM INPUT LEVEL AT 20 HZ:** +16 dBv (ref. = 0.775 v)