



# COUNTRYMAN ASSOCIATES, INC. DIRECT BOXES



## TYPE 85 FET DIRECT BOX

List Price: \$238.65

An industry-standard with proven ruggedness, the Type 85 DI is a classic. Using only the highest quality, hand-selected discrete components woven into a single-ended Class A circuit, the Type 85 delivers a smooth sound much like a classic tube microphone preamp.

### Product Highlights

- Pure, elegant circuit design
- Time-proven ruggedness
- Exceptional signal-handling capacity
- Rock-solid transformer isolation

### Specifications

**Freq. Resp.:** 20Hz–20kHz (+/- 1dB)  
**Noise:** -122dBu  
**THD:** 0.018%, 1kHz and 1V<sub>pp</sub> in  
**Max Input:** 5V<sub>pp</sub> (pickup), 300V<sub>pp</sub> (speaker)  
**Input Res.:** 10MΩ (pickup mode)



## TYPE 10 DIRECT BOX

List Price: \$299.00

The Type 10 delivers unparalleled performance, with an innovative design that minimizes noise and distortion better than any competitor DI. Armored inside and out, expect ultimate sonic purity and accuracy from the Type 10 night after night, even in the toughest venues.

### Product Highlights

- Supremely accurate response
- Ultra-wide, flat bandwidth
- Built extremely tough for the road
- Phantom/battery power test feature
- Rock-solid transformer isolation

### Specifications

**Freq. Resp.:** 10Hz–50kHz (+/- 1dB)  
**Max SNR:** 122dB  
**THD:** < 0.001%, 1kHz and 1V<sub>pp</sub> in  
**IMD:** < 0.005% (10kHz/60Hz, 4:1)  
**Input Res.:** 10MΩ (0dB)



## TYPE 85S STEREO DIRECT BOX

List Price: \$395.00

The Type 85S is a two-channel version of the classic Type 85 FET direct box. With several input connector options, a huge dynamic range, and three pad settings, the Type 85S is an excellent choice for a wide variety of stereo applications.

### Product Highlights

- Pure, elegant circuit design
- 1/4", RCA, and 1/8" input connectors
- Exceptional signal-handling capacity
- Rock-solid transformer isolation
- Ultra-low interchannel cross-talk

### Specifications

**Freq. Resp.:** 20Hz–20kHz (+/- 1dB)  
**Noise:** -122dBu  
**THD:** 0.018%, 1kHz and 1V<sub>pp</sub> in  
**Max Input:** 5V<sub>pp</sub> (0dB), 28V<sub>pp</sub> (-15dB), 190V (-30dB)  
**Input Res.:** 10MΩ (pickup mode)



## TYPE 10S STEREO DIRECT BOX

List Price: \$550.00

The Type 10S is a two-channel version of the Type 10 direct box. Each channel uses the same innovative circuitry as the Type 10—delivering industry-leading technical performance—with some new features that add versatility.

### Product Highlights

- Supremely accurate response
- 1/4", RCA, and 1/8" input connectors
- Phantom/battery power test feature
- Rock-solid transformer isolation
- Ultra-low interchannel cross-talk

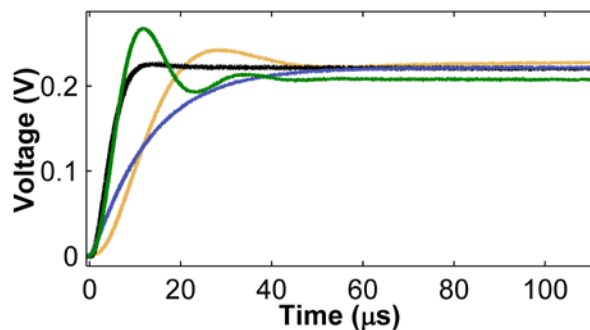
### Specifications

**Freq. Resp.:** 10Hz–50kHz (+/- 1dB)  
**Max SNR:** 122dB  
**THD:** < 0.001%, 1kHz and 1V<sub>pp</sub> in  
**IMD:** < 0.002% (10kHz/60Hz, 4:1)  
**Input Res.:** 10MΩ (0dB)

## Accurate Transient Response of the Type 10

The Type 10, and the Type 10S, deliver outstanding transient response as a result of their flat and wide bandwidth ( $\pm 1$  dB, 10Hz–50kHz) and ultra-low deviation from linear phase ( $<2^\circ$ , 30Hz–20kHz). Nothing will sound muddy or blurred when passed through the Type 10. Instead, your sound will be accurate, clean, and completely faithful to the source.

Most competitor DIs can achieve a flat frequency response from 20Hz to 20kHz, but very few possess a clean transient response. We measured the step response for three top-selling competitor DIs and plotted them to the right. Only the Type 10 (in black) is free of large overshoot, underdamped ringing, and overdamped (lazy) response. That's why only the Type 10 can faithfully preserve the clarity of your instruments.



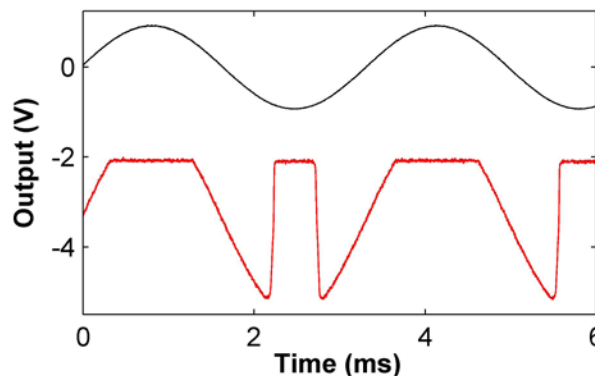
Step response of the Type 10 (black) and three competitor stereo DIs. Only the Type 10 accurately preserves transients.

## Outstanding Overload Characteristics of the Type 85

Most DIs do not handle high signal levels with grace. The Type 85 and Type 85S use a Class A FET amplifier that overloads smoothly in a way that never sounds harsh or brittle. In contrast, numerous other active DIs—except the Type 10 or Type 10S, of course—use old and cheap op amps plagued by poor overload characteristics; most notably, *phase inversion*.

Phase inversion is where the op amp output will abruptly transition from one supply to the other on overload. This leads to countless non-linear artifacts. In fact, phase inversion will even mask the original fundamental frequency of the source.

We plotted the output from the Type 85 (in black) and a popular—and more expensive—competitor active DI (in red) with a 300Hz, 6Vpp, pure tone on the input and a typical load on the output. The differences are striking: while the Type 85 starts to smooth its valley at the bottom of the sine wave, the competitor DI output clips and exhibits phase inversion.



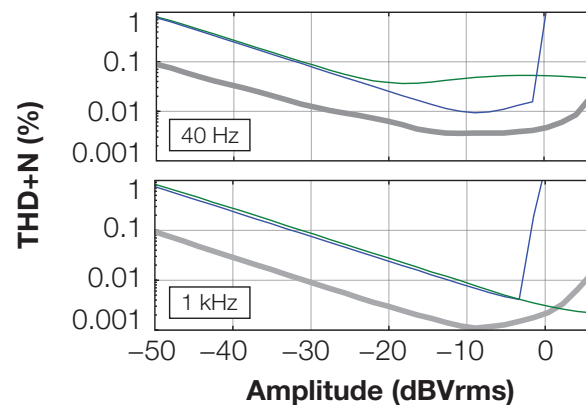
Output of the Type 85S (black) compared to a more expensive popular competitor active DI (red) with the same 6Vpp sine wave at 300Hz applied to the input—the Type 85S overloads gracefully while the competitor DI harshly exhibits phase inversion.

## Exceptionally Low Distortion and Noise of the Type 10

When it comes to total harmonic distortion and noise (THD+N), the Type 10 and Type 10S significantly outperform the competition. These THD+N plots show the percentage of distortion and noise a DI box adds to your sound as you increase the level, for both 40 Hz and 1 kHz inputs.

Some boxes achieve low distortion over a narrow range of frequencies and levels, but end up coloring the low frequencies and distorting loud signals. We believe that a great DI should pass all relevant amplitudes and frequencies of inputs with virtually immeasurable THD+N levels.

Competitive active (shown in blue) and passive DIs (shown in green) introduce nearly 10 times more THD+N than the Type 10 (shown in grey)—the popular active DI shown here actually clips and distorts badly at even moderately high levels. For most instruments, the critical region of this curve is from -20 dBVrms to 3 dBVrms, where the THD+N for the Type 10 is less than 0.005% for the entire audio band.

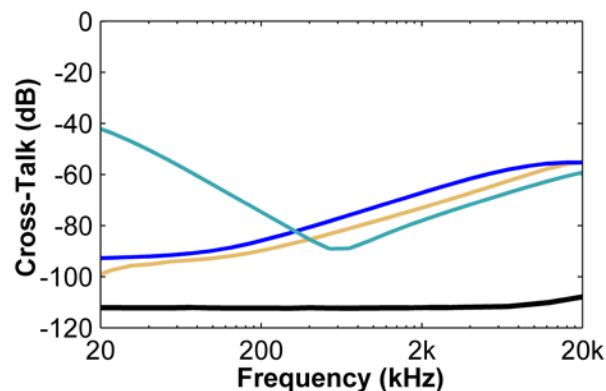


THD+N (%) versus amplitude for the Type 10 (in grey) and a very popular passive (in green) and active (in blue) competitor DI. The Type 10 THD+N is nearly 10 times less than both competitors, and remains below 0.005% for the entire audio band.

## Rock-Solid Crosstalk Rejection of our Stereo DIs

Both of our stereo DIs excel at rejecting interchannel crosstalk—the unintended mixing of signals from one channel to the other. For most competitor stereo DIs, crosstalk is a major limiter of performance, particularly of usable dynamic range. For example, crosstalk rejection of 60 dB means whatever you plug into channel one will also feed into channel two—padded by 60 dB. This would decrease your dynamic range for most pro DI boxes by 40 to 60 dB (100 to 1000 times)!

Since many stereo DI manufacturers omit specifying cross-talk rejection, we decided to take some measurements on three of the most popular active stereo DIs on the market, and plotted the results here with the Type 10S for comparison (the Type 85S curve is identical). Our stereo DIs outperform the competition by 20 to 60 dB, ensuring that they function exactly like two separate one-channel DIs side-by-side.



The Type 10S and Type 85S (shown in black) outperform three popular competitor stereo DIs by 20-60 dB in crosstalk rejection.