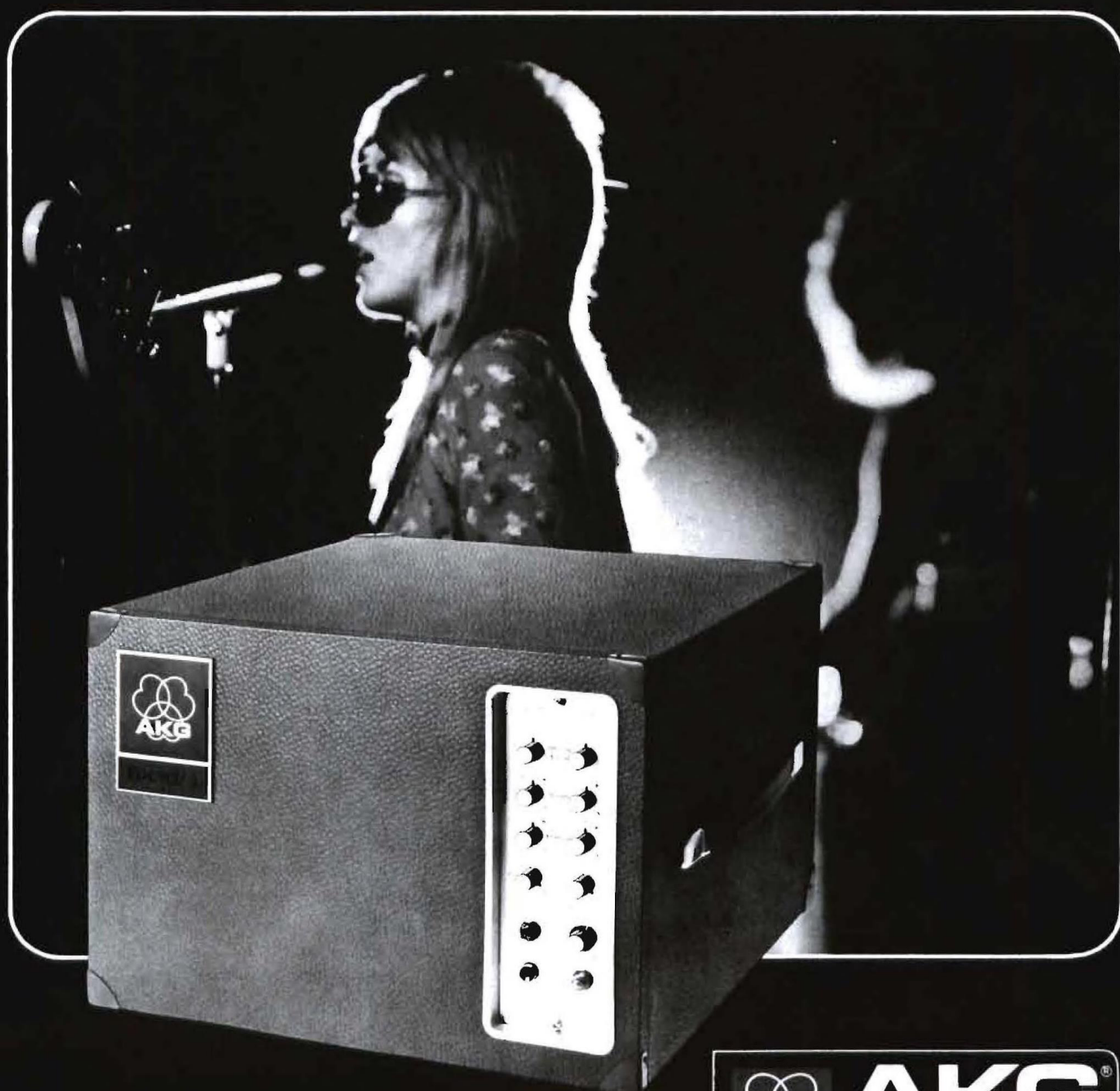
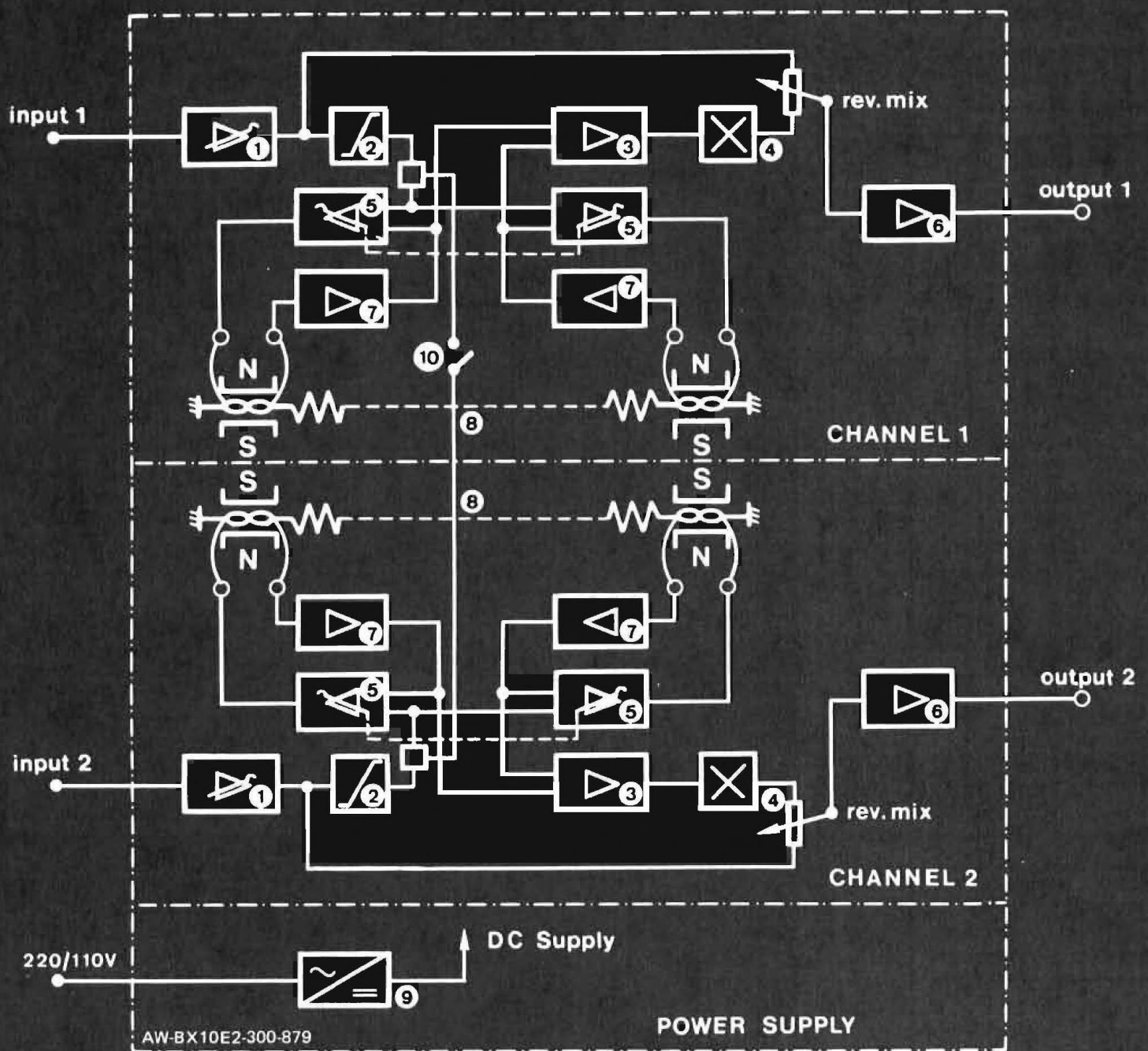


AKG BX-10E2  
portable & studio  
TTL reverberation system





### BLOCK DIAGRAM

- |   |  |
|---|--|
| 1. Input preamplifiers with switchable sensitivity        | 6. Master output amplifiers                |
| 2. TTL-system input limiters                              | 7. TTL-system motional-feedback amplifiers |
| 3. TTL-system output buffer amplifiers                    | 8. TTL-system springs and transducers      |
| 4. Reverb high- and low-frequency equalization controls   | 9. Power supply                            |
| 5. TTL-system drive amplifiers with switchable decay time | 10. Reverb mono stereo switch              |

## AKG BX-10E2

### The ultimate "natural sound" portable reverberation unit

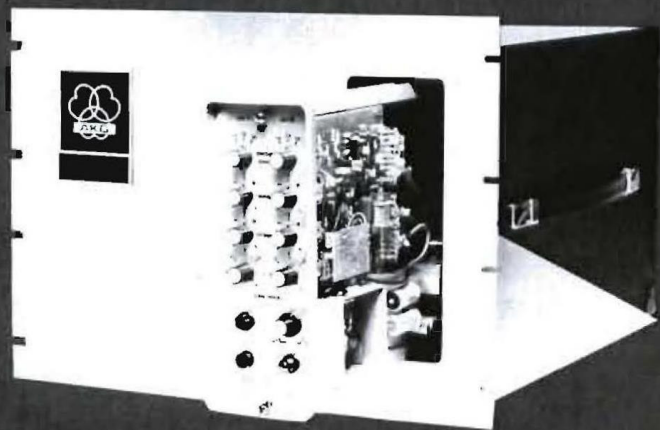
The AKG BX-10E2 is a carefully evolved improvement of the original BX-10E two-channel reverberation unit. Audibly smoother and cleaner than its famous predecessor, the BX-10E2 employs a redesigned Torsional Transmission Line (TTL) system plus newly developed equalization in its TTL-system electronics. (A patented AKG development, the TTL system assures highly accurate and natural reverberation characteristics by using a series of springs having their transmission properties controlled by statistical variations of their parameters. Moreover, the TTL system is the only reverb device—including live chambers—which does not contain any of the dry input signal at its output.) The result is an instrument that is *the* reference-standard for compact, high-performance reverbs—a unit that is truly portable, yet one that offers both the quality and operating features required in critical studio applications. Unrivalled in its class, the BX-10E2 is surpassed only by AKG's own larger and widely acclaimed BX-20E.

The BX-10E2 offers many important features for superior performance in a quality portable reverberation unit:

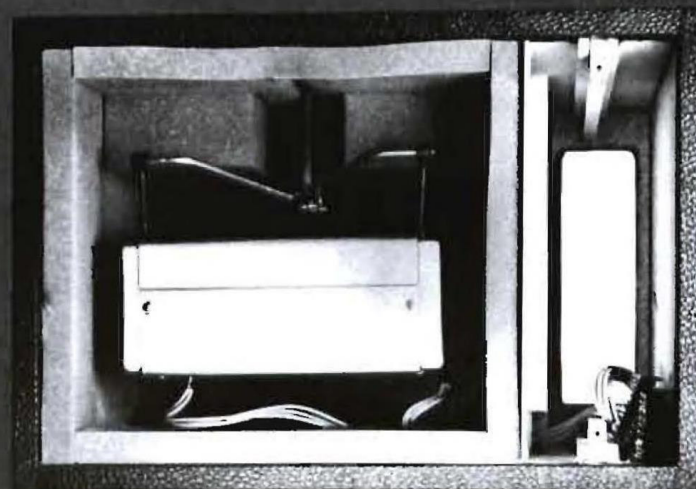
- Uses Torsional Transmission Line principal
- High density of resonant frequencies
- High pulse density to duplicate the many sound paths of a naturally reverberant environment
- High degree of statistical diffusion in both frequency and time domains
- Linear frequency response for maximum range of applications
- Precise duplication of natural room-reverberation effects
- Genuine two-channel design. Either channel can be used and controlled separately (channel separation:  $\geq 35$  dB).
- Switchable to composite mono drive (inputs 1+2) of reverb channels; dry channels are independent at all times
- Adjustable input sensitivity
- Built-in limiters (one per channel) to prevent overdriving of TTL systems
- Built-in low- and high-frequency shelving equalization for each reverb channel
- Built-in reverb/dry signal mixing
- No acoustic feedback... even when placed close to monitor loudspeakers
- No special mounting or isolation is required for installation
- Ideally suited for van or mobile studio operation. Lightweight (only 47 lbs)
- No locking or readjustments necessary for transportation
- No periodic maintenance, adjustments or "tuning"
- Small space requirements (12" H x 17 $\frac{5}{8}$ " W x 19 $\frac{1}{2}$ " D)
- RM-10 19" rack mount available

The BX-10E2 provides independent decay-time adjustment, reverb high- and low-frequency equalization, and reverberation/dry signal mixing for each channel. Both channels are electronically and acoustically separate. Decay time is adjusted through motion feedback. Reverberation/dry signal mixing enables reverberation to be added to dry signal without the need of a "reverb return" mixing section in the mixing console. The AKG BX-10E2's unique two-point suspension makes it impervious to acoustic feedback and mechanical vibration.

**BX-10E2-Short:** For speech and some music applications requiring shorter reverb decay times, AKG offers a special version of the BX-10E2. Known as the BX-10E2-Short, this specially modified unit provides switch-selectable decay times of 1, 2 and 3 seconds for improved articulation and intelligibility. The BX-10E2-Short has already gained almost instant recognition by major radio stations throughout the U.S., and is equally at home in film and videotape studios.



Slide-out access to modular electronics  
(shown with RM-10 rack mount)



Soundproofed and vibration-isolated construction

## TECHNICAL DATA

**Number of Channels:** Two

**Nominal Input Level:** -22, -6, +6 and +12 dBm (independently and internally switchable for each channel)

**Maximum Permissible Input Level:** 18 dB above selected nominal input level, each channel

**Input Impedance:**  $\geq 2000$  ohms, balanced, each channel (stereo or mono operation)

**Dry/Reverb Output-Mix Facilities:** Each channel independently and continuously adjustable for any dry/reverb output ratio ranging from pure dry signal only to pure reverb signal only

**Output Level, Frequency Response, Total Harmonic Distortion, Crosstalk Rejection, Signal/Noise Ratio:** These data differ between dry-signal-only and reverb-signal-only output modes; see various entries under appropriate output-data headings below

**Output Impedance:**  $\leq 100$  ohms, balanced, each channel

**Recommended Load Impedance:**  $\geq 200$  ohms each channel

**Max. Permissible Operating Angle of Inclination (measured at housing):**  $\leq 8$  degrees

**Power Supply:** 120/220 volts ac +15, -10% (internally switchable) 40-60 Hz

**Power Consumption:** 12 VA

**External Dimensions:** 12" H x 17-5/8" W x 19-1/2" D

**Net Weight:** Approx. 47 lbs

**DRY-SIGNAL-ONLY OUTPUT DATA (Reverb mix controls in both channels turned fully ccw for pure dry-signal outputs):**

**Nominal Output Level:** +3 dBm ( $\pm 3$  dB) each channel

**Max. Continuous Sine-Wave Output:** +8 dBm each channel

**Frequency Response:**  $\pm 1$  dB 50-20,000 Hz; -3 dB at 30 Hz

**Total Harmonic Distortion (load  $\geq 200$  ohms per channel):**

At selected input level:  $\leq 0.5\%$  at 40 Hz;  $\leq 0.2\%$  at 1000 Hz;  $\leq 0.25\%$  at 5000 Hz

At 6 dB above selected input level:  $\leq 0.8\%$  at 40 Hz;  $\leq 0.2\%$  at 1000 Hz;  $\leq 0.25\%$  at 5000 Hz

**Crosstalk Rejection Between Channels:**  $\geq 70$  dB

**Signal/Noise Ratio at Nominal Output Level (per DIN 45 405):**

**Weighted:**  $\geq 75$  dB rms. **Unweighted:**  $\geq 75$  dB rms

**REVERB-SIGNAL-ONLY OUTPUT DATA (Reverb mix controls in both channels turned fully cw for pure reverb-signal outputs):**

**Reverb Decay Time (measured with 1/3-octave pink noise centered at 500 Hz):** Each channel independently switchable, 1.5, 2.5 and 3.5 seconds

**Maximum Output Level:** Associated equipment requires up to +24 dBm input headroom per channel to accommodate instantaneous peaks in reverb signal

**Level Difference Between Channels:**  $\leq 2$  dB (same decay time, both channels)

**Frequency Range:** 20-12,000 Hz

**Frequency Response:** 50-8000 Hz within tolerance band of  $\pm 6$  dB from design-center curve with pink noise at input, and with output measured through 1/3-octave filter

**Bass Control Range:**  $\pm 8$  dB shelving at 150 Hz (independently and continuously adjustable for each channel)

**Treble Control Range:**  $\pm 4$  dB shelving at 5000 Hz (independently and continuously adjustable for each channel)

**Crosstalk Rejection Between Channels:**  $\geq 35$  dB (per DIN 45 505)

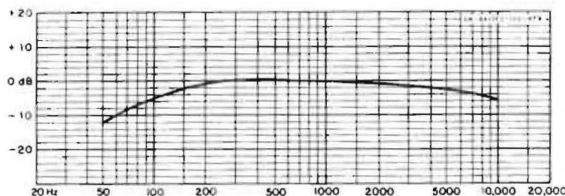
**Hum Sensitivity:**  $\leq 1$  mV/50 mG field

**Signal/Noise Ratio at Nominal Output Level (bass and treble controls at "flat" or "0" settings, DIN 45 405):**

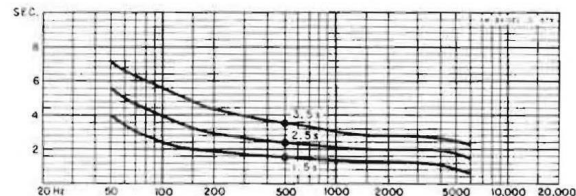
**Weighted:**  $\geq 65$  dB rms. **Unweighted:**  $\geq 60$  dB rms

**Acoustic-Feedback Isolation:**  $\geq 100$  dB; i.e. sound level in close proximity to unit may be up to 100 dB SPL before acoustic feedback occurs

**Elastic-Suspension Resonant Frequency:**  $\leq 10$  Hz



BX-10E2: Frequency response, reverb signal only (1.5 sec decay time)



BX-10E2: Decay time vs. frequency



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