

1Hz to 110kHz ULTRA-LOW DISTORTION OSCILLATOR



Frequency Range: 1Hz to 110kHz

Ultra-low Distortion: <.001% (-100dB)

Simultaneous Main, Quadrature and Inverted Outputs

Output Amplitude: 7 Volts RMS, Open-Circuit; 3.5 Volts RMS (+13dBm) across 600 ohms

Amplitude Flatness: ± 0.05 dB

Calibrated, Pushbutton Attenuator

The Model 4400 is an ultra-low distortion, stable amplitude oscillator designed to meet the needs of today's audio test and measurement technology.

Covering the frequency range from 1Hz to 110kHz, the 4400 produces a virtually "distortion-free" (<.001%) sinewave for measuring audio preamplifier and power amplifier harmonic distortion. With its exceptionally flat response (.05dB) the 4400 eliminates the need to constantly monitor voltage level, during frequency response tests.

The 4400 provides a 7 volt RMS sinewave output. The 3 position, pushbutton attenuator calibrated in 20dB steps, along with the 30dB vernier provide a total

dynamic range of 90dB. Precise frequency selection is possible with the unique 3 digit tuning selector.

Simultaneous inverted (180°) and quadrature (90°) outputs are also provided. Each output is 7 volts RMS with 600 ohm source impedance.

When combined with an ultra-low distortion analyzer, such as the Krohn-Hite 6800 series, (Figure 2) it provides a complete distortion measurement system. (For details on the 6800 low distortion analyzer series, refer to separate bulletins.)

The 4400 is the perfect addition to your present test and/or precision measurement set-up.

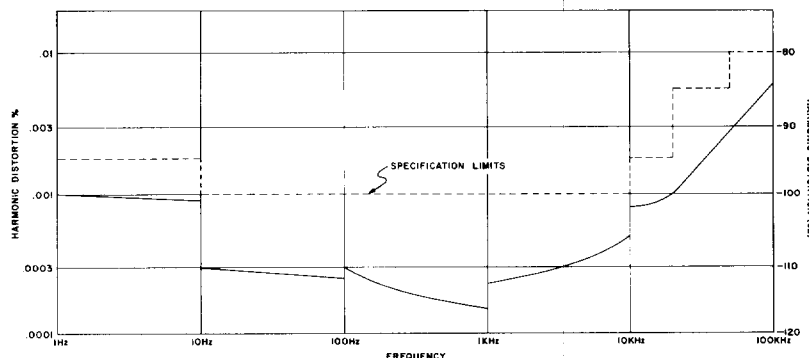


FIGURE 1 TYPICAL DISTORTION

FREQUENCY RANGE: 1Hz to 110kHz.

FREQUENCY CONTROL: 2 digits of frequency, calibrated in 1Hz and 0.1Hz steps, with a calibrated vernier providing continuous coverage between the 0.1Hz steps, plus a 5 decade, pushbutton multiplier with overlapping ranges.

FREQUENCY ACCURACY: $\pm 1\%$ of frequency setting.

FREQUENCY STABILITY:

VS TIME: .01% in 1 hour or less.

VS TEMP: .05%/°C.

VS LINE: $< .001\%$ for 10% change in line voltage.

MAIN, INVERTED AND QUADRATURE OUTPUTS:

Maximum Output Amplitude: 7 volts RMS, open circuit, 3.5 volts RMS (+13dBm) into 600 ohm load.

Output Impedance: Constant 600 ohms, and 50 ohms.

Maximum Output Current: 10 ma Rms.

Main Output Amplitude Control: A four position pushbutton attenuator calibrated in 20dB steps from zero to -60dB. Accuracy, $\pm 25\text{dB}/20\text{dB}$ step. Volts RMS control with greater than 30dB of coverage calibrated in volts. Accuracy $\pm 20\%$ of setting.

Minimum Output: Less than 0.2 millivolts.

Amplitude Flatness:

MAIN AND INVERTED OUTPUTS: $\pm .05\text{dB}$, 1Hz to 110kHz.

QUADRATURE OUTPUT: $\pm 2\text{dB}$, 1Hz to 110kHz.

Amplitude Stability:

VS TIME: .01% in 1 hour or less.

VS TEMP: .05%/°C.

VS LINE: $< .001\%$ for 10% change in line voltage.

Output Distortion:

Frequency	Main and Inverted Outputs	Quadrature Output
1Hz-10Hz	$<.0018\%$ (-95dB)	$<.0056\%$ (-85dB)
10Hz-10kHz	$<.001\%$ (-100dB)	$<.0031\%$ (-90dB)
10kHz-20kHz	$<.0018\%$ (-95dB)	$<.0056\%$ (-85dB)
20kHz-50kHz	$<.0056\%$ (-85dB)	$<.0174\%$ (-75dB)
50kHz-110kHz	$<.01\%$ (-80dB)	$<.031\%$ (-70dB)

Phase Accuracy:

INVERTED OUTPUT (180°): 1Hz to 10kHz: $\pm 0.2^\circ$
10kHz to 110kHz: $\pm 1^\circ$

QUADRATURE OUTPUT (-90°): 1Hz to 1kHz: $\pm 0.2^\circ$
1kHz to 10kHz: $\pm 1^\circ$
10kHz to 110kHz: $\pm 10^\circ$

Hum and Noise: Greater than 100dB below signal (10Hz to 20kHz detector bandwidth).

AMBIENT TEMPERATURE RANGE: 0°C to 50°C.

POWER REQUIREMENTS: Switch selectable, 90-132 or 180-264 volts, single phase, 50-60Hz, 6 watts.

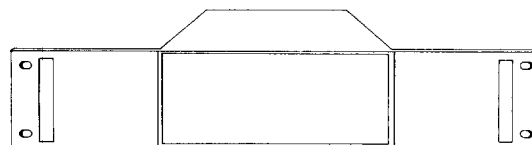
FLOATING GROUND: Rear panel switch floats circuit ground from chassis ground up to 100V.

DIMENSIONS AND WEIGHTS:

Cabinet Size/Weight

	H	W	D	Net	Gross
U.S.	3½ in	9 in	8½ in	5 lb	7 lb
Metric	8.9 cm	23 cm	21.6 cm	2.3 kg	3.2 kg

OPTIONAL RACK-MOUNTING KIT: Part No. RK-39: Permits installation of the Model 4400 into a standard, 19" rack spacing.



Specifications subject to change without notice.

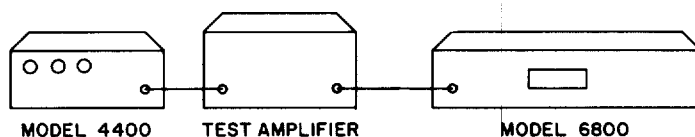


FIGURE 2. MEASURING AUDIO AMPLIFIER DISTORTION USING THE KH 4400 AND KH 6800.