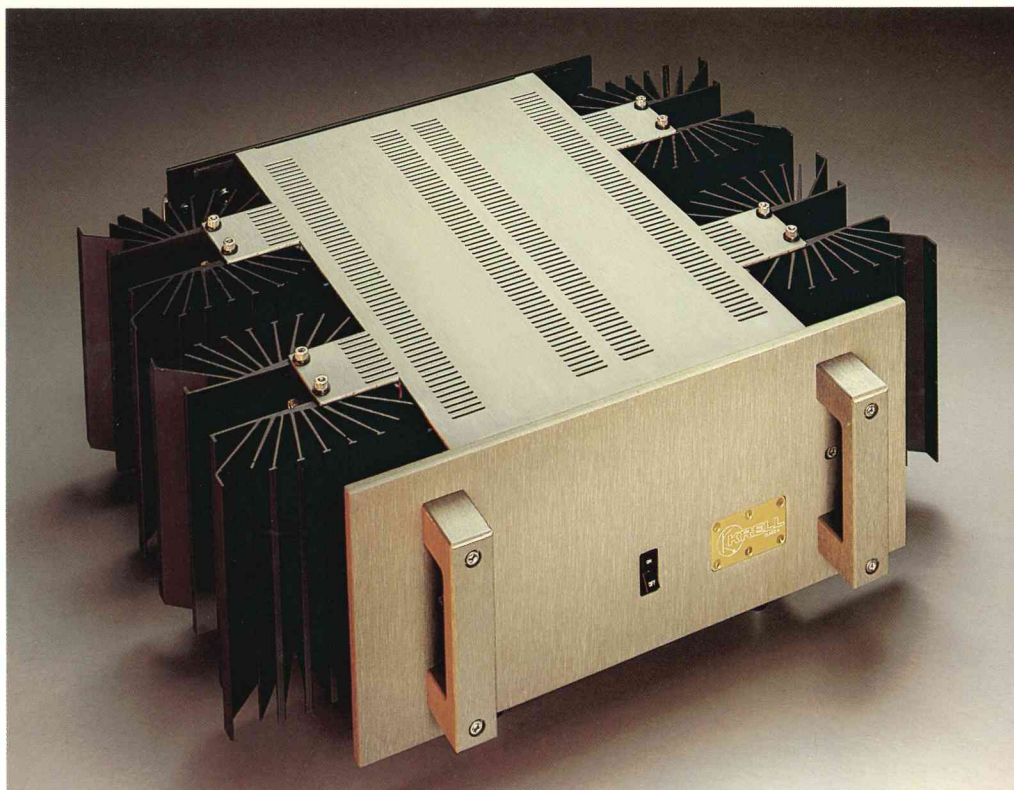


*KSA-80 and KMA-160
Class A
Programmable Amplifiers*



KSA-80 /KMA-160

KRELL has been responsible for many significant product and design innovations since its inception in 1981. Of the many recognized firsts, several stand out as particularly significant: a complete preamplifier and amplifier line utilizing Class A circuitry for all gain stages; a line of amplifiers that deliver large amounts of Class A power into all impedances; the ability of every amplifier model to double its output into impedances as low as 1 ohm, with some models able to drive .1 ohm; the first completely DC coupled preamplifiers and amplifiers; the first amplifiers to operate in balanced mode from input to output.

With the introduction of the *Programmable Series*, KRELL again distinguishes itself by offering new and unique design solutions to the changing realities of audio amplification. The new series of amplifiers retains the most fundamental concepts of previous designs, evolved through seven years practical application. Two years of research into the limits of analog technology have preceded the introduction of the *Programmable Series*. The combination of criteria for the new amplifiers, gleaned from experience and evolved audio technology, has yielded designs that address the most important issues of owning high-end audio equipment. The KSA-80 and KMA-160 embody these developments and offer unprecedented value and performance. Below is a more technical discussion of the amplifier's design and performance.

PROGRAMMABLE CONSTRUCTION

The *Programmable* concept was conceived in the pursuit of several new design goals: the elimination of obsolescence; a line of amplifiers using similar audio circuitry, giving each unit the same sonic quality; the delivery of much greater amounts of power, both Class A and headroom, to handle the needs of very wide dynamic range software and inefficient or low impedance loads. The concept has been implemented in several interesting ways. The main chassis/supply of the KSA-80 and

KMA-160 is the same: it can be programmed for either stereo or monaural operation. The KSA-80 can be reprogrammed into a KMA-160. At the factory or the overseas distributor the stereo unit can be converted to mono at no cost, excluding freight. The converted unit is returned with a new KMA-160 as a matched pair. This process allows upgrading without the usual problems and inevitable loss of money involved with trading-in or selling existing gear before purchasing new equipment. And at the KMA-160 level, with balanced inputs, the performance is extraordinary. The KSA-80/KMA-160 amplifiers are intended to present a long-term solution to amplification requirements.

CLASS A OPERATION AND POWER

KRELL has played a major role in demonstrating that Class A operation is the only method of achieving excellent sonic reproduction under the most diverse conditions. All KRELL amplifiers utilize Class A circuitry from input to output. The KSA-80 is rated at 80 watts per channel of Class A power; the KMA-160 delivers 160 Class A watts per chassis. The Class A rating, however, does not fully account for the superb sonic performance of these amplifiers, nor does it describe their maximum power. Equal in importance to Class A operation, which inherently draws large amounts of current from the AC mains, is a power supply that can support these demands and allow a significant amount of headroom. It must also allow the amplifier to comfortably drive speakers of 1 ohm or less, which also requires a tremendous reserve of current. The KRELL definition of the ability to drive low impedances is that the output must double into successively lower impedances. The KSA-80 will deliver 160 watts per channel into 4 ohms; 320 per channel into 2 ohms; 640 per channel into 1 ohm. The KMA-160 will deliver 320 watts into 4 ohms; 640 into 2 ohms; 1280 into 1 ohm. They can drive less than 1 ohm: a new Low

Impedance Limit Set in the protection circuitry, adjusted by the dealer or distributor at the time of purchase, can be programmed to safely couple the amplifier to very low impedance loads. The power supply also has a separate regulated stage for the input audio circuitry. This completely eliminates the possibility of interaction between the input and output sections and makes the amplifier much more dynamic and powerful. Research for the *Programmable* concept included transformer development, the primary requirement being the ability to deliver greater amounts of current without increasing physical size. This was achieved through the use of newly developed core materials and sophisticated winding processes. The total output of the transformer is 30% greater than would be possible with conventional designs. This enables the KSA-80 and KMA-160 to develop large amounts of exceptionally clean power into any speaker.

AUDIO CIRCUITRY

Many of the principles employed in the audio circuitry for the KSA-80 and KMA-160 were derived from technology developed for the KRELL Reference Series. Integral to the *Programmable* concept is that stereo and monaural units have the same sonic qualities. As with all KRELL products, they are direct-coupled from input to output, eliminating degradation introduced by capacitors in the signal path. The amplifiers are extremely fast and phase coherent, regardless of power output. The decision in purchasing a KRELL Programmable amplifier, then, is based on system requirements and long-range planning; it does not involve compromising sonic quality.

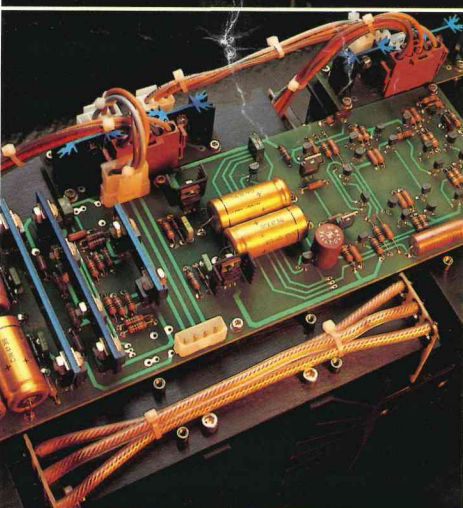
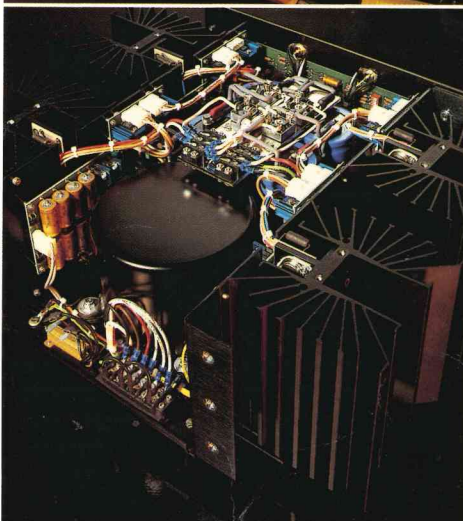
BALANCED OPERATION

The significant difference between the KSA-80 and KMA-160, power aside, is that the KMA-160 has balanced inputs. The reason balanced operation is audibly superior to single-ended operation is difficult to describe technically, but very easy to hear. Balanced systems have long been standard in professional audio equipment and many of the same issues apply to residential audio. When a KSA-80 is reprogrammed to mono the left and right inputs are changed to non-inverting and inverting inputs. The KMA-160 can be operated with a preamplifier that does not have balanced outputs. It will reveal its complete value and character, however, when used with a balanced preamplifier.

WARRANTY/PROTECTION

The KSA-80 and KMA-160 are protected by a series of optically-coupled, non-intrusive circuits that continuously evaluate the amplifiers' operation. Collectively, the protection circuitry is designed to avoid damage caused by other defective components, faulty wiring, mishandling of the system or amplifier failure. Should a unit fail, it is covered by a transferable warranty of five years for parts, labor and return freight.

KRELL believes in offering products that will operate exceptionally well for long periods of time. The KSA-80 and KMA-160 are intended to be real solutions to amplification needs, in terms of assembling a system over time, reliability, and sheer excellence of performance. Those virtues, however, are not enough to justify the investment. We also believe that part of every KRELL is premium service for the life of the unit. When you purchase a KRELL product, you acquire the finest in audio amplification together with the peace of mind in knowing KRELL provides consummate support for its customers.



Specifications

POWER

OHMS	KSA-80	KMA-160
8	80/ch	160
4	160/ch	320
2	320/ch	640
1	640/ch	1280

SIGNAL TO NOISE RATIO

"A" Weighted

KSA-80	120dB/ch
KMA-160	120dB

THD

Full power output, 20-20K
Less than .1%

IM DISTORTION

Any combination
of frequencies
Less than .1%

SLEW RATE

In excess of 500 volts
per microsecond

SENSITIVITY

Input required for
full power output
KSA-80 .68 v
KMA-160 1 volt

INPUT IMPEDANCE

47,000 ohms

DAMPENING FACTOR

Greater than 800 from
20 Hz to 20 kHz

POWER CONSUMPTION

KSA-80	650 watts
KMA-160	800 watts

WARRANTY

5 years limited and
transferable

DIMENSIONS

Height: 9"
Width: 23 1/4"
Depth: 21 1/8", handle
to handle

WEIGHT

Unit only: 75 lbs.
For shipment: 85 lbs.

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