

KENWOOD

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# INSTRUCTION MANUAL AND WARRANTY



# KENWOOD

"THE SOUND APPROACH TO QUALITY"



**MODEL KT-10U**  
**ALL TRANSISTOR**  
**AM-FM STEREO AUTOMATIC RECEIVER**

## WELCOME TO KENWOOD'S NEW EXPERIENCE IN SOUND

Getting acquainted with your new Kenwood KT-10U is an exciting experience. Forty-two transistors are ready to give you ALL-TRANSISTOR AM-FM AUTOMATIC STEREO RECEPTION of highest quality. You'll find the excitement multiplies as you discover the many other features hidden inside and displayed outside the handsome new chassis.

Your KT-10U is equipped with a newly developed protection circuit which guards against wide-

spread transistor damage due to a short circuit which could otherwise occur at the output jack. The KT-10U gives extra long-life to output transistors.

A total of 40 watts music power (20 watts on each stereo channel) and FM AUTOMATIC circuit are ready to select FM STEREO stations instantly with the help of a built-in, high standard electrical system.

Go ahead — enjoy it! Your new Kenwood KT-10U expects rugged use. It was designed and engineered to take it.

## SPECIAL KT-10U FEATURES

1. Completely transistorized tuner, pre-amplifier and main amplifier all on a single chassis. (Total 43 transistors.)
2. New AUTOMATIC circuit breaker protects transistors for added long life. (U.S. Pat. Pend.)
3. Instant start with one-second warm-up.
4. Cool performance.
5. New AUTOMATIC electrical switching between FM multiplex stereo and monaural modes.
6. AUTOMATIC switching FM stereo multiplex and monaural indicator.
7. Perfect stereo separation with stereo multiplex switching circuit.
8. SCA noise eliminator.
9. Output and input transformerless circuit.
10. 40 watts total music power (IHF Standard power at 8 ohms.)
11. Front panel stereo headset jack.
12. Illuminated meter for pinpoint tuning.
13. Direct tape monitor system.
14. New smooth see-saw switch.
15. Bright, handsome appearance.
16. Direct tape monitor system circuitry is incorporated for perfect tape recording.

## CONNECTIONS TO COMPONENT PARTS

### SPEAKER CONNECTIONS

4 - 16 ohm speakers are suitable. Connect right speaker to right speaker jack; left speaker to left speaker jack. Should plus or minus of either right or left channel be reversely connected, sounds from the center section will be affected by a lack of separation. In this case, turn the SPKR PHASE switch. Red marked side indicates polarity.

Special Protection: If you operate your KT-10U while speakers are disconnected, a newly developed protection circuit (Pat. Pend.) guards against short circuiting at the output jack.

Note: Connecting conductor in excess of 100 feet may cause some power loss.

### STEREO HEADSET JACK

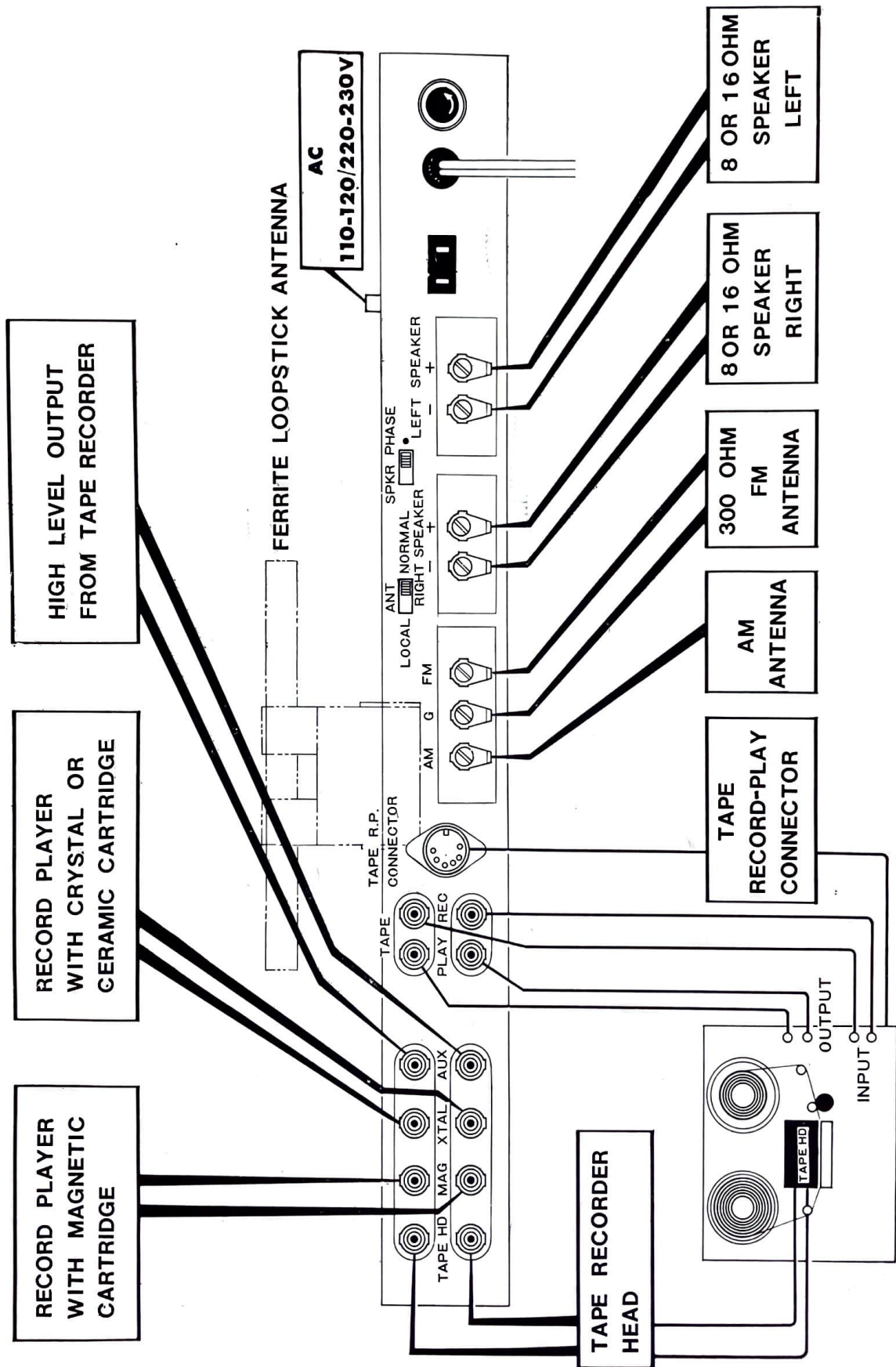
Enjoy the wonderful sounds of stereo without disturbing others or monitor the playback of tapes as you record them with your Stereo Headset. Plug the headset into the STEREO PHONES JACK and turn the SPKR SWITCH to OFF position.

Note: When the Stereo Headset is not in use, keep the SPKR SWITCH in ON position.

### TAPE RECORDERS

You may tape FM MONAURAL, FM MULTISTEREO, AM and RECORDS by connecting the output jack of TAPE REC to the input jack of the tape recorder. Play back your recordings

# INTERCONNECTING DIAGRAM



by simply connecting the output of your tape recorder to the TAPE PLAY jack of your KT-10U. (Diagram, page 2.)

### STEREO RECORD PLAYERS

The two lines of shielded cord from your stereo record player should be terminated with RCA type phono plugs. Cords should not exceed ten feet in length. (An excess will create a loss in high frequency range.)

For Low Level Phono Inputs: Inputs from a magnetic or variable reluctance (constant velocity type) cartridge connect to the MAG jacks.

For High Level Phono Inputs: Inputs, from "Constant Amplitude" phono cartridges such as

crystal or ceramic, connect to the XTAL jacks.

### TAPE HD

This enables simultaneous playback monitoring while you record. When using three-head recorders, set the TAPE MONITOR switch to ON position. You may now monitor the recording level, acoustic balance, microphone position, etc.

### TAPE RECORDER EQUIPPED WITH RP CORD.

If you use a tape recorder equipped with an RP cord, you can reproduce stereo recording merely by plugging the cord into the socket provided for this purpose.

## ELECTRICAL CONNECTIONS

### POWER

You will find the 110 — 120V / 220 — 230V Voltage Selector near the power transformer, which wires the tuner for operation from either 110 — 117V or a 220 — 230V AC current source.

### AM ANTENNA

The ferrite loop stick built into the Model KT-10U assures adequate reception of all local AM stations. However, in fringe areas, high noise areas, or where surrounding metal objects interfere with normal reception, a regular antenna lead should be connected to the terminal designated AM.

Note: The ferrite loop stick is mounted on a swivel bracket. For maximum pickup, the loop stick should be swung away from the chassis.

### FM ANTENNA

Two terminals are provided for connection to a 300 ohm FM antenna as shown in the interconnecting diagram.

For good FM stereo reception, always use the best antenna possible. In areas close to the transmitter, a simple indoor dipole antenna may suffice. It should be remembered, however, that the pickup of reflections (similar to "ghosts" on TV) will result in poor stereo reception. These reflections must therefore be reduced to a minimum, either by careful orientation of the indoor antenna or, if this will not eliminate them, by using a more directional outdoor type antenna.

In areas a greater distance from the transmitter, the use of an outdoor antenna is highly recommended. These are available in various types. For reception of stations scattered in many directions, a non-directional type may be required. If the desired stations lie mostly in one direction, a high-directional type of antenna will offer better results. When using a directional antenna, always orient it for the best reception of the desired station. The correct position will be indicated by maximum deflection of the tuning meter on your receiver.

## CONTROLS AND THEIR FUNCTION

### 1. SELECTOR

This switch selects the program source. The following describes each function:

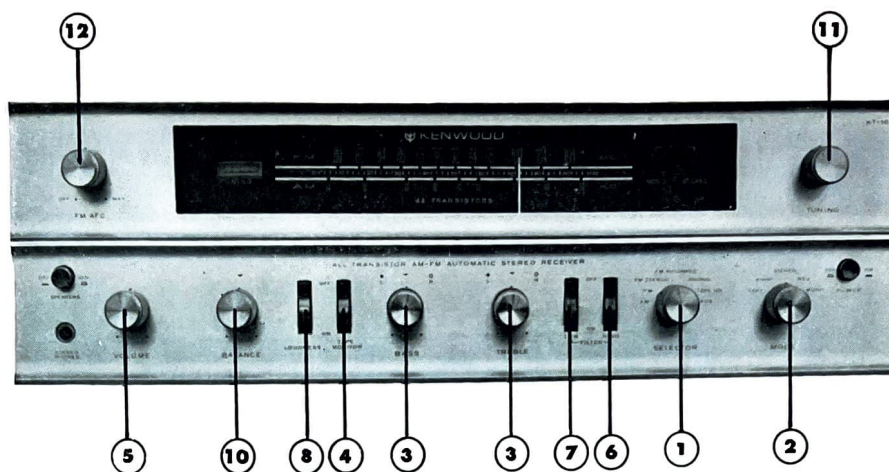
- a. AM — Selects the output of the AM tuner section for reproduction through the amplifier
- b. FM — Selects the output of the FM tuner section for reproduction through the amplifier.

FM MONO, FM STEREO indicating lamp located in the right top corner on the front

panel will be lit in red and this shows the set is receiving FM Monaural Broadcasting program.

- c. FM STEREO — In this position special multiplex circuitry is switched in to produce left and right channels from an FM stereo signal.

Reception of FM Monaural broadcasting is also possible through this position. When it is difficult to distinguish whether it is Monaural or Stereo reception use FM AUTOMATIC.



The indicating lamp is always blue when the set is receiving FM STEREO broadcasts.

- d. FM AUTOMATIC — This position selects FM Broadcasting stations automatically with the help of a built in high-standard electrical system. The RED indicating lamp means reception of FM Monaural broadcasting and not FM Stereo broadcasting signals.

When an FM Stereo broadcast is tuned in with the help of the built-in electrical system, the indicating lamp will turn to BLUE. For reception of FM Stereo broadcasts both positions of FM STEREO and FM AUTOMATIC can be used, but remember the BLUE indicating lamp should always be confirmed when tuning in FM Stereo stations.

- e. PHONO — Select sources connected to MAG and XTAL input jacks. It is not desirable to have equipment connected to both pairs of jacks at the same time.
- f. TAPE HD — This position is used only for tape playbacks directly from the tape head.
- g. AUX — Selects sources connected to the AUX input jacks.

## 2. MODE

This switch determines the manner in which program sources (previously selected by the SELECTOR switch) will go through the amplifier section.

**LEFT** — Reproduction is provided through left speaker only.

**RIGHT** — Reproduction is provided through right speaker only.

**STEREO** — This provides stereophonic reproduction of any stereo program source. This position will also provide monophonic reproduction through both channels when the SELECTOR switch is in the FM or AM position.

**REV** — This reverses positions of the two speakers. The left signal is now heard from the right speaker, and right signal from the left speaker.

**MONO** — Mixes left and right channels.

## 3. BASS AND TREBLE

This is a friction type tone control for Bass and Treble. To control separately left and right channels, hold one of the two knobs of L and R (inner one and outer one) and operate the other knob, then tone of single channel will be changed. Each channel tone will be controlled simultaneously unless one knob is held. Turning clockwise increases tones and counter-clockwise decreases them and center setting is at level.

## 4. TAPE MONITOR SWITCH

The KT-10U incorporates a Tape Monitoring circuitry enabling you to monitor while you record. Connections to the tape recorder are made as explained in the section dealing with "Interconnecting Diagram."

### *For Two-head Tape Recorders*

Ordinary two-head type tape recorders are not equipped with a separate playback monitor amplifier to enable tape recording and simultaneous monitoring. The KT-10U makes this possible.

Simply switch the TAPE MONITOR switch to OFF position, and feed the signal to be recorded through the KT-10U for both recording and monitoring. Switch to ON position for playback of the recorded tape through the KT-10U speaker system. (For this, you must, of course, have your tape recorder in playback operation).

### *For Three-head Tape Recorders*

Three-head type tape recorders have separate recording and playback heads, and their respective separate amplifiers. This enables simultaneous playback monitoring of the recording. For operating the KT-10U in conjunction with three-head type recorders, set the TAPE MONITOR switch to ON position. This enables monitoring the recording and fully controlling level, acoustic balance, microphone position, etc.

#### 5. VOLUME

The single control designated VOLUME adjusts the level of both channels simultaneously. To adjust one channel only, use the BALANCE control.

#### 6. HIGH FILTER

This switch inserts a filter into the circuit and reduces the high-frequency noise.

#### 7. LOW FILTER

This switch inserts a low frequency filter into the circuit and reduces the rumble from a noisy turntable or changer with minimum effect on program material.

#### 8. LOUDNESS

This switch provides the frequency response change (bass and treble boost) required by the ear at low listening levels, and permits the VOLUME control to function as a compensated loudness control.

#### 9. SPEAKER PHASE

Use to ensure correct phasing of the loudspeakers in the event that, during connection, the two speakers were connected out of phase. (See "Phasing of Loudspeakers")

#### 10. BALANCE

This control provides a simple means of adjusting the levels of both channels for proper balance during stereophonic reproduction.

## 11. TUNING

Tuning for either AM or FM is carried out with the single control designated TUNING. Always tune for maximum deflection of the tuning meter.

## 12. FM AFC

The FM tuner section incorporates an effective AFC (Automatic Frequency Control) circuit which insures proper tuning even if manual tuning has not been accurately carried out. By turning on the AFC control, the tuner section will automatically lock-in the section for best possible reception when the dial setting is close to the desired station. In addition, AFC will counteract any tendency on the part of the tuner to drift away from the frequency tuned in and thus prevent the need for manual retuning.

AFC should not be used to compensate for inaccurate or hurried initial tuning. Station selection must be carried out with the AFC control in its OFF position, carefully tuning for maximum deflection of the tuning meter. Therefore, AFC may be applied to counteract any slight drift that might occur.

Certain conditions may prevail which make the use of AFC undesirable. For example, applying AFC when tuning in a weak station, which is adjacent to a strong one, may cause the tuning to be pulled towards the stronger station. For maximum reception of a weak station which is adjacent to a strong one, the AFC switch should therefore be left in the OFF position.

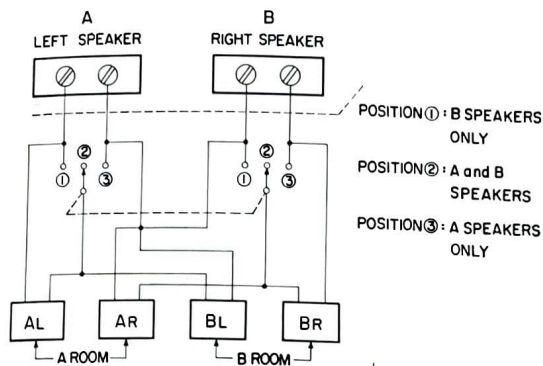
### WARNING

There is a fundamental difference between a transistor and a vacuum tube. If misused the superior characteristics of the transistors are decreased. Avoid using under direct sunlight. This causes internal rise in heat which damages the transistors. Temperature under 50 degrees C (120 degrees F) is recommended, so warning is repeated — do not use under direct sunlight.

### RE: PROTECTION CIRCUIT

The newly developed protection circuit is completely effective and prevents damage which may be caused by short circuits at the speaker outputs or the electrical overloading point. When short circuit occurs this protection circuit will act automatically to protect the transistors. The program sound will be heard off and on intermittently about every one second. In this case, there is no fear of damaging the transistors. Just switch off the supply line and check the connections.

When using two separate speaker systems, connections should be made utilizing a double-pole triple-throw switch as shown in the diagram.



## RE: FM AUTOMATIC

This position selects, with the function of the electrical circuit which tunes out pilot carrier 19KC, FM STEREO broadcast stations. Sometimes the external electrical noise will light the FM STEREO BLUE LAMP and in this case the tuning meter will hardly deflect. This indicates the BLUE LAMP is not the real stereo broadcasting signal. It is not the failure of the set.

### NOTE:

At times the blue lamp may not light when receiving an FM Stereo broadcast with the Selector Switch (FM AUTOMATIC) in ON position. This may happen when the broadcasting signal is weak, and is not an indication of set failure.

## OPERATING INSTRUCTIONS

Before operating the stereo receiver, make sure you have connected your speakers and any other associated equipment (record player, tape recorder, etc.). Initially, set BASS and TREBLE controls to their mid-positions, MODE switch control to STEREO, VOLUME to minimum.

### AM OR FM OPERATION

To start the receiver, turn the POWER switch to ON. Set the SELECTOR switch to AM or FM and the MODE switch to MONO. Sound will be heard through both speakers. Adjust the VOLUME control as necessary and tune in the desired station.

### FM STEREO OPERATION

Set MODE switch to STEREO and SELECTOR switch to FM AUTOMATIC. In this position, FM STEREO broadcasting is selected. The in-

## PHASING OF THE SPEAKERS

Correct phasing is important in a stereophonic system. If the speakers are out of phase, they will work in opposition of each other and there will be a noticeable loss in low frequencies. Use the following procedure to make adjustments:

- Set SELECTOR to PHONO, MODE to MONO. Set VOLUME for desirable listening level.
- Play a record containing heavy bass passages and adjust the BALANCE control (Volume Control) to approximately equal output from both speakers.
- Set the PHASE switch first to one position, then to the bass tones in each position. Leave the switch in the position where the greatest amount of bass is heard in the general area between the two speakers.

## ELECTRICAL SUPPLY VOLTAGE

Your KT-10U is all transistorized, but for domestic use, the electrical supply voltage is AC 110-120 volts. The external electrical supply jacks are for record player, tape recorder, etc. The main switch of the set coordinates with these jacks and the specified current is 60 watts. Overloading is impossible.

## FUSE

Shield 2A fuse is used. Rotate the fuse holder counter-clockwise for replacing. When the fuse has blown out, check carefully the reason for the blow-out and then replace the fuse. When something is wrong with the supply circuit, the fuse will blow again. Do not, in any case, use copper wire in place of the specified shield fuse.

dicating lamp will automatically be BLUE to show that a stereo broadcast is tuned in. After this, switch either to FM STEREO or to FM AUTOMATIC. At times, some external noise may cause the indicating lamp to light BLUE. In such case, see "Remarks Re: FM Automatic" of this pamphlet.

### PHONO OPERATION

STEREO — set the SELECTOR switch to PHONO, MODE switch to STEREO. Adjust all other controls as necessary for the proper stereo reception.

MONOPHONIC RECORD PLAYERS — set SELECTOR to PHONO and MODE to MONO, depending on whether the monophonic record player is plugged into the LEFT or RIGHT phono jack. The program source will now be heard through both speakers.

## SPECIFICATIONS

Transistors Used:	43 transistors, 7 Silicon diodes, 14 Germanium diodes. 5 Zener diodes, 1 Variable Capacitor.
Frequency Range:	FM; 80 — 108 MC AM; 535 — 1605 KC
Sensitivity:	FM; 1.9 microvolts (Input required for S/N 20 db) AM; 6 microvolts (Input required for S/N 10 db)
Frequency Response:	20 — 20,000 cps $\pm 1/2$ db
FM Separation:	More than 35 db
FM Harmonic Distortion:	FM; less than 1% FM Stereo; less than 1% (400 cps 100% modulation)
SCA Rejection:	More than 50 db
Inputs:	MAG 1.5 mV, TAPE HD 1.5 mV, XTAL 80 mV, AUX 100 mV, TAPE PLAY 100 mV, TAPE REC.
Output Power:	40 watts total music power or 20 watts per channel. (IHF Standard at 8 ohms.) 17 watts per channel RMS power (at 1% harmonic distortion, 8 ohms.)
Tone Control:	Bass ; 100 cps +10 db, -10 db Treble; 10,000 cps +10 db, -11 db
Low Filter:	- 10 db at 50 cps
High Filter:	- 12 db at 10,000 cps
Loudness Control:	100 cps +10 db, 10,000 cps +5 db (Volume control at -30 db)
Hum and Noise:	Phono - 60 db, Tape HD. - 60 db, AUX - 72 db (Below rated output, Tone control flat)
Oscillator Radiation:	3 db below FCC requirement.
Special Circuit:	Automatic electrical switching stereo multiplex adapter built-in, FM AFC control, FM mono stereo automatic indicator, Low Filter, High Filter, Tape monitor, Front panel Headphone jack.
Power Consumption:	AC 50 — 60 cps, 110 — 120 220 — 230 volts,. 11 watts (no input), 78 watts (max power)
Dimension:	Width 17 $\frac{3}{4}$ ", Height 5 $\frac{1}{2}$ ", Depth 14"
Net Weight:	24 lbs.