



Built To Meet The Most Demanding User Requirements

SWM Series Wall Mount Amplifiers

SWM-35A, SWM-60A, SWM-100A

- Three balanced microphone or auxiliary inputs
- Telephone audio page port input
- Multi-level priority switching
- Voice controlled switching on all inputs
- Mix all inputs or priority input option switch
- Triple level output protection:
thermal, active current limiting, circuit breaker
- Bass and treble controls
- Effects loop with link switch
- Booster output
- Screwdriver adjustable volume controls
- Two built-in tone generators
(single and warble tone--single has precedence)
- Power "ON" indicator
- Clipping indicator
- Screw terminals provided for all connections
- Easy, convenient wall mounting

SPECIFICATIONS:

Power: 35, 60 and 100 watts

Outputs: 4 ohm, 25/70 volts

Finish: Black with light texture and white graphics

Dimensions: 11.5" (29.21 cm) H x 13.25" (33.7 cm) W
x 4.32" (10.97 cm) D

Weight: **SWM-35A** 16 lbs (7.2 kg)

SWM-60A 19 lbs (8.55 kg)

SWM-100A 22 lbs (9.9 kg)

SEVEN BAND EQUALIZER MODULE SWM-EQ

(Used with SWM-35A, 60A, and 100A)

- 7 active filters
- \pm 12 dB boost or cut
- Constant Q equalization
- Power "ON" indicator
- Booster output connection
- Modified 1 octave equalization

SPECIFICATIONS:

Dimensions: 4.0" (10.2 cm) H x .3" (23.6 cm) W
x 2.6" (6.6 cm) D

Weight: 3.0 lbs (1.35 kg)





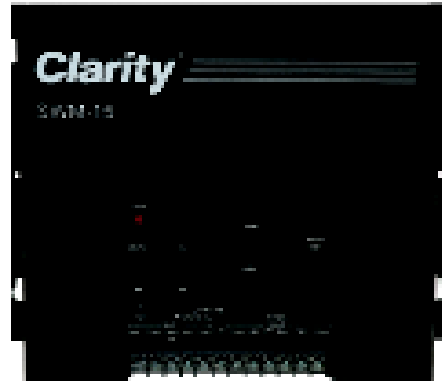
TECHNICAL SPECIFICATIONS

SWM SERIES MIXER-AMPLIFIERS

FEATURES

SWM-15

- VOX OPERATED PRIORITY OVERRIDE OR ACTIVE MIX
- SEPARATE VOLUME CONTROL FOR EACH INPUT
- FUSE PROTECTED
- 15 WATTS RMS
- WALL MOUNT
- TWO INPUTS: MIC/TEL AND AUX
- MASTER GAIN CONTROL
- SCREW TERMINALS FOR ALL CONNECTIONS
- SEPARATE BASS AND TREBLE CONTROL



FEATURES

SWM-35A, SWM-60A, SWM-100A

- THREE INPUTS: MIC 1/TEL, MIC 2/AUX 1 AND AUX 2
- BUILT-IN TONE GENERATORS: WARBLE/SINGLE
- AUTO LEVEL CONTROL ON TEL LINE INPUT
- 35, 60, AND 100 WATTS RMS
- WALL MOUNT
- MASTER GAIN CONTROL
- CIRCUIT BREAKER PROTECTION
- AUTOMATIC LIMITING CIRCUITS
- SEPARATE BASS AND TREBLE CONTROLS
- SCREW TERMINALS FOR ALL CONNECTIONS
- CASCADING PRIORITY OVERRIDE OR ACTIVE MIX
- SEPARATE VOLUME CONTROL FOR EACH INPUT



DESCRIPTION

SWM-15

The Clarity SWM-15 mixer-amplifier mixes and controls two inputs. Input one accommodates either a balanced low impedance microphone or a 600 ohm tel line audio input. A slide switch located on the front of the unit changes the input from Mic to Tel. Input two provides connection for a high impedance auxiliary input. The unit is wall mountable and includes individual input controls along with bass, treble, and master gain controls. A power "ON" LED indicator is illuminated when the unit is receiving ac power.

Priority is provided and activated by a slide switch located on the front of the unit. The override is VOX operated and does not require a contact closure.

The mixer-amplifier provides 8 ohm, 25 and 70.7 volt outputs. Screw terminals are provided for all connections. Automatic limiting circuits protect the mixer-amplifier in the event of an overload or short circuit on the outputs. A replaceable fuse is used to supply primary circuit protection.

SWM-35A, SWM-60A, SWM-100A

The Clarity SWM series mixer-amplifiers mix and control up to three inputs. Input one accommodates either a low impedance balanced microphone or 600 ohm tel line audio input. Input two allows the use of a low impedance balanced microphone or a high impedance auxiliary input. Input three is used with a high impedance input.

All three models are wall mountable and include individual input controls along with bass, treble, master gain, and tone level controls. LED indicators are provided to show power "ON" and clipping. Automatic Level Control is provided on the Tel line input. The mixer-amplifiers are equipped with two types of tone signalling, warble and single tone. These tones are activated by contact closures. In the event both contacts close simultaneously, the single tone will override the warble tone.

Priority override is provided on the mixer-amplifiers and enabled by a slide switch located on the front of the amplifier. The override is VOX operated, eliminating the need for contact closures. The override sequence is as follows, Mic 2/Tel overrides Mic 2/Aux 1 and Aux 2. Mic 2/Aux 1 overrides Aux 2.

The mixer-amplifiers provide 4 ohm, 25, and 70.7 volt outputs. Screw terminals are provided for all connections. Automatic limiting circuits provide amplifier protection in the event of an overload or short circuit on the output. A circuit breaker provides primary protection.

ARCHITECTS SPECIFICATIONS

SWM-15

The mixer-amplifier Model SWM-15 shall have a full power rating of 15 watts rms. The mixer-amplifier shall be completely solid-state and have screw-type connections for all inputs and outputs.

The mixer-amplifier shall have a frequency response of 80 Hz to 15 kHz with less than 2% distortion of rated output. Input one shall accept either a 600 ohm balanced microphone or a 600 ohm telephone page port input. A slide switch shall determine how input one is utilized. The input impedance of the auxiliary input shall be 10 kohm. The microphone input sensitivity shall be 1.5 mV rms and the auxiliary input sensitivity shall be 200 mV rms. The Tel line sensitivity shall be -10 dBm. No external impedance matching devices shall be required when connecting to telephone page ports.

The bass control shall provide +/- 10 dBm of boost or cut at 100 Hz center frequency. The treble control shall provide +/- 10 dBm of boost or cut at 10 kHz center frequency.

The mixer-amplifier shall have screwdriver adjustable bass, treble and master volume controls in addition to an individual volume control for each input. A slide switch located on the front of the mixer-amplifier shall select between active mix of both inputs or priority override. If active mix is selected, both inputs shall be blended into one output. If priority override is selected, input one shall have precedence over the auxiliary input.

The mixer-amplifier shall provide a protective limiting circuit to protect against shorts or impedance mismatches. The unit shall shut down in the event of a trouble condition and reactivate when the condition is corrected.

The operating temperature shall be 0 to 50 °C (32 to 122 °F). The mixer-amplifier housing shall be constructed of 20 AWG steel and finished in carbide black with a light texture and white lettering.

Dimensions of the unit shall be 10-9/16" (26.80 cm) wide x 2-15/16" (7.49 cm) deep x 8-1/4" (20.96 cm) high. The unit shall weigh approximately 8 lbs (3.64 kg).

SWM-35A, SWM-60A, AND SWM-100A

The mixer-amplifier Model SWM-___ shall have a full power rating of ___ watts rms. The mixer-amplifier shall be completely solid-state and have screw-type connections for all inputs and outputs.

The mixer-amplifier shall have three inputs, Mic 1/Tel, Mic 2/Aux 1 and Aux 2. Each microphone input shall be compatible with low impedance balanced microphones. The auxiliary inputs shall allow the use of high impedance sources, i.e., tuners, cassette tape decks, etc. The mixer-amplifiers shall provide a single tone and warble tone output activated by separate contact closures and controlled with a level control. If both tones are activated simultaneously, the single tone shall override the warble tone. The mixer-amplifier shall have screwdriver adjustable bass, treble and master volume controls in addition to an individual volume control for each input. All controls shall be screwdriver adjustable to prevent inadvertent operation.

The mixer-amplifiers shall provide cascading VOX operated priority override. The override sequence shall be as follows, Mic 1/Tel overrides Mic 2/Aux 1 and Aux 2, Mic 2/Aux 1 overrides Aux 2. This feature shall be activated by a slide switch located on the front of the mixer-amplifier. Automatic Level Control shall be provided on the Tel Line input. This feature shall be fully automatic requiring no external setup. A separate bass and treble control shall be provided. Visual indications shall be provided to show power "ON" and clipping of signal in the output stage of the mixer amplifier.

The mixer-amplifiers shall meet the following performance specifications. Each model shall meet its rated output at less than 1% THD. Frequency response shall be 50 Hz to 16 kHz +/-2 dB. Microphone source impedance shall be 600 ohm nominal providing a balanced interface to the microphones. The sensitivity of the microphone inputs shall be 1 mV. The auxiliary inputs sensitivity shall be 10 kohm nominal with a sensitivity of 200 mV. The Tel line input shall provide a nominal input impedance of 600 ohm with a sensitivity of 200 mV. No external impedance matching devices shall be required to connect to Key system of PABX paging ports. The bass control shall provide +/-10 dB of boost or cut at 100 hz center frequency. The treble control shall provide +/-10 dB of boost or cut at 10 kHz center frequency.

The mixer-amplifiers shall be capable of operation from a 120 V, 60 Hz line. A push to reset circuit breaker shall provide primary circuit protection. A thermostat mounted on the heat sinks shall be provided to prevent thermal damage to the amplifiers in the event of an overload or abnormal rise in the ambient temperature. Heat sinks shall be enclosed in the cabinet and adequate ventilation provided for cooling. Screw terminals shall be provided for all connections.

The amplifiers shall be wall mountable, not requiring any additional brackets. The amplifiers finish shall be black with a light texture. All screening shall be white in color. The amplifier dimensions shall be 13-1/4" (33.66 cm) H x 4.375" (11.11 cm) D x 11-1/2" (29.21 cm) W. The weight shall be: SWM-35 - 16 lbs.(7.2 kg); SWM-60 - 19 lbs (8.62 kg); and SWM-100 - 22 lbs (9.98 kg).

Limited Warranty

Clarity warrants its products to be free from defects in materials and workmanship under conditions of normal use and service for a period of one year from the date of shipment. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period, provided that:

1. inspection by Clarity indicates the validity of the claim,
2. the defect is not the result of damage, misuse, or negligence after the original shipment,
3. the product has not been in any way repaired by others and that factory sealed units are unopened. (A service charge plus parts and labor will be applied to units defaced or physically damaged).
4. freight charges for the return of products to Clarity are prepaid,
5. all units "out of warranty" are subject to a service charge. The service charge will cover minor repairs (major repairs will be subject to additional charges for parts and labor).

This warranty is in lieu of and excludes all other warranties expressed or implied, and in no event shall Clarity be liable for any anticipated profits, consequential damages, loss of time or other losses incurred by the buyer in connection with the purchase, operation or use of the product.

This warranty specifically excludes damage incurred in shipment. In the event a product is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved in accordance with the F.O.B. point.



SWM-35A, SWM-60A, SWM-100A 35, 60 AND 100 WATT WALL MOUNT AMPLIFIER

INTRODUCTION

These instructions contain the specifications necessary to install, operate, and maintain the Clarity Wall Mount Amplifier(s). These units are available in 35, 60, or 100 watt versions, with selection of the specific unit being dependent on the power needs of each application.

"WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture."

"WARNING: SHOCK HAZARD - DO NOT OPEN."

"AVIS: Risque de Choc Electrique ne pas Ouvrir."

"PELIGRO: Corriente Electrica - No Abres."

SPECIFICATIONS

The Clarity Wall Mount Amplifier (35, 60, or 100 watts) is designed to provide audio power that can be used to operate 4 Ohms, 25 volt or 70 volt type speakers or horns for voice paging or background music systems.

Applications

- Paging and Sound Reinforcement Systems
- Stand Alone Background Music Systems
- Telephone Paging Systems

Refer to Figure 1 for a block diagram of a typical installation.

Features

- Priority override or Mix all inputs (switch selectable)
- Effects Loop In or Out (switch selectable)
- Master volume control
- Bass control
- Treble control
- Volume control on each of 3 inputs
- Tone signal volume control
- All controls are screwdriver adjustable
- Power "ON" indicator

- 4 Ohm, 25V or 70V outputs
- Tel Line Input
- Warble and single tone
- Tones activated by dry contact closure
- Booster output
- Clipping indicator
- Accessory power and interface connections for SWM-EQ



Dimensions/Weight

- 13.25" W x 12.1" H x 4.5" D
(33.7cm W x 30.7cm H x 11.4cm D)
- Weight: 35 Watt 16 lbs. (7.3 kg)
 60 Watt 16 lbs. (7.3 kg)
 100 Watt 19 lbs. (8.6 kg)

Nominal Specifications

Type of Outputs:	4 Ohms, 25 volts, 70 volts	
Frequency Response	80Hz-15kHz ±2dBm	
Distortion	<2%	
Number of Inputs - 4	Mic 1/Tel Line, Mic 2/Aux 1, Aux 2, 1 Contact Closure	
Mounting	Wall	
Voice Switch Sensitivity	-31dBm	
Mic Input Impedance	600 Ohm Bal	
Sensitivity on Mic Input	1mV	
Tel Line Input Impedance	600 Ohms	
Aux Impedance	10K Ohms	
Booster Output	2.6V RMS 10K Loading	
Effects Out	1VRMS +/-20%	
Effects In	1VRMS 10K	

Output Specifications

	4 Ohms Output Level	25 Volts Load Impedance	70 Volts Load Impedance
35W	11.8VRMS	18 Ohms	143 Ohms
60W	15.5VRMS	10.4 Ohms	83 Ohms
100W	20.0VRMS	6.3 Ohms	50 Ohms

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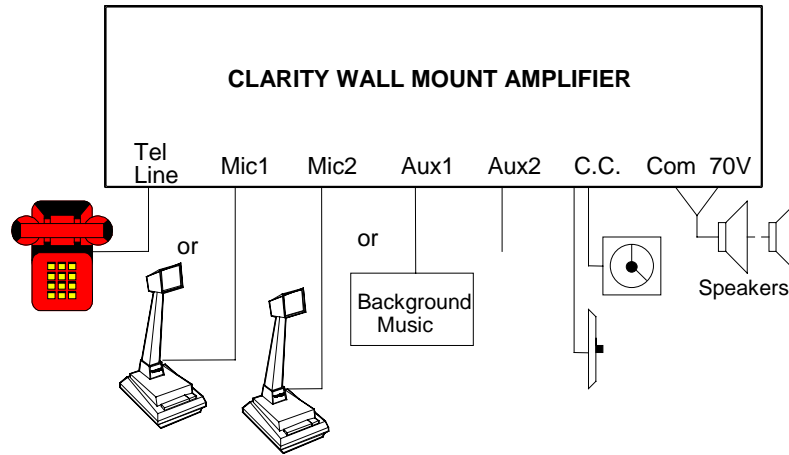


FIGURE 1 - BLOCK DIAGRAM OF A TYPICAL INSTALLATION

Nominal Power Requirements

Voltage	120 VAC, 60 Hz
AC Current	35 Watt Amp, 1.0 Amp
	60 Watt Amp, 1.5 Amp
	100 Watt Amp, 2.5 Amp

Environment

Temperature	0 to 50°C
Humidity	0 to 85% non-precipitating

DESIGN

The Wall Mount Amplifier is designed to provide audio power (35, 60, or 100 watts) to operate 4 ohm, 25 volt or 70 volt type speakers and horns. Active Mixing of all inputs or Priority input is switch selectable. In the "Priority" mode, the sequence is as follows:

"MIC 1/TEL" overrides "MIC 2/AUX 1" and "AUX 2," "MIC 2/AUX 1" overrides "AUX 2."

An ON/OFF switch is not required for operation of the wall mount amplifier. The unit activates when the AC power cord is plugged in. The "Power" LED illuminated indicates the amp is ON.

The amplifier has a "Master" volume control, input controls, separate "Bass" and "Treble" controls, and "Tone Signal" level control. The unit also contains a resettable circuit breaker. When the amplifier exceeds its output rating, the "Clipping" LED will illuminate. If this condition is not corrected, the unit will shut down and must be re-activated by resetting the circuit breaker. The amplifier has automatic level control on the Tel line input. A signal greater than -10dBm will activate the automatic level control, reducing the output gain of the amplifier.

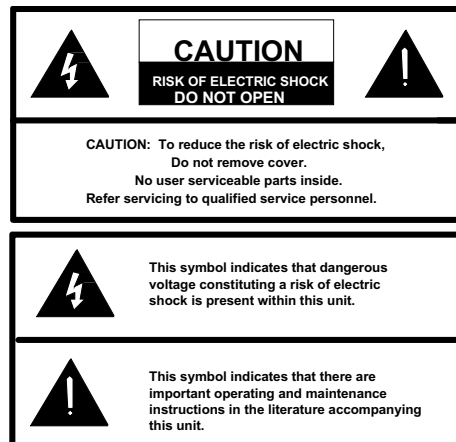
An "Effects Loop" is provided to allow connections of equalizers and other types of signal processing equipment. A slide switch on the front of the

amplifier enables the "Effects Loop," when in the "In" position.

INSTALLATION

Precautionary Designations

Mounting



The Clarity wall mount amplifiers were designed for wall mounting. When mounting this unit, secure it to

wall studs or a suitable brace. (A plywood backboard 2' square and at least 1/2" thick attached to wall studs would be considered a suitable brace). Make certain the unit is not mounted near heat sources or strong magnetic fields. Determine control and terminal strip accessibility before mounting the unit.

Four #10 x 3/4 cross-tip round head wood screws are included for mounting. Fasten two of these screws at the appropriate location on the mounting surface (approximately 12.65" apart and parallel to the floor), allowing the screwheads to protrude 1/8" to 1/4". Place the chassis of the unit onto the screwheads at the mounting slots. Position the two remaining screws and fasten through the remaining mounting slots. Tighten screws to complete the mounting.

General

The Clarity Wall Mount Amplifier provides connections for three input sources: "Tel Line/Mic 1" input, "Mic 2/Aux 1" input, and "Aux 2" input.

Tel Line Connections

Referring to Figure 3, connect the telephone system audio page port leads to the screw terminals designated as "Tel" and "Tel Com." **NOTE:** *Interface devices are required when connecting to outside C.O. Lines, PABX extensions, single line telephones or telephone system trunk ports.*

Mic Connections

The Clarity Wall Mount Amplifier provides connections for low impedance balanced microphones. For the "Mic 1" input, connect the positive pressure lead of the microphone (normally pin 2 of a standard XLR connector) to the "Mic 1 +" screw terminal; connect the microphone shield to the "Mic 1 Com" terminal; and the negative pressure lead of the microphone to the remaining "Mic 1" screw terminal.

To connect a microphone to the "Mic 2" input, connect the positive pressure lead of the microphone to the "Mic 2 +" screw terminal connection; microphone shield to the "Mic 2 Com" screw terminal; and the negative pressure lead of the microphone to the remaining "Mic 2" screw terminal. (See Figure 3).

Auxiliary Connections

High impedance auxiliary devices such as a tuner, tone generator, etc. can be connected to the "Aux" inputs. Connect common out to "Aux Com" screw terminal and audio out to the remaining "Aux" screw terminal. (See Figure 3).

Effects Loop Connections

Only qualified service personnel should install the signal processing equipment. Connect the amplifier's "EFFECTS OUT" to the input of the equalizer or other signal processing equipment. Connect the "EFFECTS IN" to the output of the signal processing equipment. Set the "Effects Loop In/Out" slide switch to the "In" position. The "Effects Loop" switch allows comparison of before "signal processed", and after effect, in the area the signal is being modified. All signal processing effects are bypassed when the "Effects Loop" switch is in the "Out" position.

Contact Closure Connections

A contact closure is used to activate the warble and single tones. Connect one side of the closure to "Tones Com" and the other side of the closure to

either the "Single" or "Warble" tone screw terminal. (See Figure 3). Both tones can be used with separate closures. If both closures are operated, the Single tone will override the Warble tone. Example: Time clock tone (Single tone) will override nite bell ringing (Warble tone).

Speaker Cabling

When the "4 ohm" output is used, standard two conductor speaker wire can be used (18-20 AWG determined by the load). If the "25V" or "70V" output is used, two conductor shielded cable is recommended for speaker connections. **NOTE:** When shielded cable is used, the shield should be connected to the ground screw terminal.

Amplifier Setup

Volume and tone controls are screwdriver adjustable. During initial system setup, it is recommended that the individual gain controls be set 1/4 turn and the "Master" volume control be set 1/4 turn (1/4 turn clockwise, from the minimum volume position - which is fully counterclockwise).

NOTE: *All connections should be made to the amplifier and double-checked before the AC power cord is plugged in.* The "Power" LED illuminates when the AC power cord is plugged in.

OPERATION

When the amplifier is in the "Mix" mode, signals on all inputs are mixed and sent to the speakers. When the "Priority" mode is selected, a signal from "Mic 1/Tel" will override "Mic 2/Aux 1" and "Aux 2" inputs. If "Mic 1/Tel" is not active, "Mic 2/Aux 1" will override "Aux 2." The override is voice activated and does not require the use of an external relay or contact closure. The separate gain controls on the unit allow adjustment of volume levels for each input.

TECHNICAL ASSISTANCE

When trouble is reported, verify that AC power is being supplied to the unit and there are no shorts or grounds on speaker cabling. Assistance in troubleshooting is available from the factory. When calling, you should have a VOM and a telephone test set available and be calling from the job site. Call (540) 427-3505 and ask for Technical Support or (540) 427-6000 for Clarity 24-hour Automated Support. Visit our website at <http://www.clarity-com.com>.

CLARITY maintains service facilities in Roanoke, VA. Should repairs be necessary, attach a tag to the unit clearly stating company name, address, phone number, contact person and the nature of the problem. Send the unit to:

**Repair and Return Dept.
Clarity
5614 Hollins Road
Roanoke, VA 24019-5056**

Clarity®

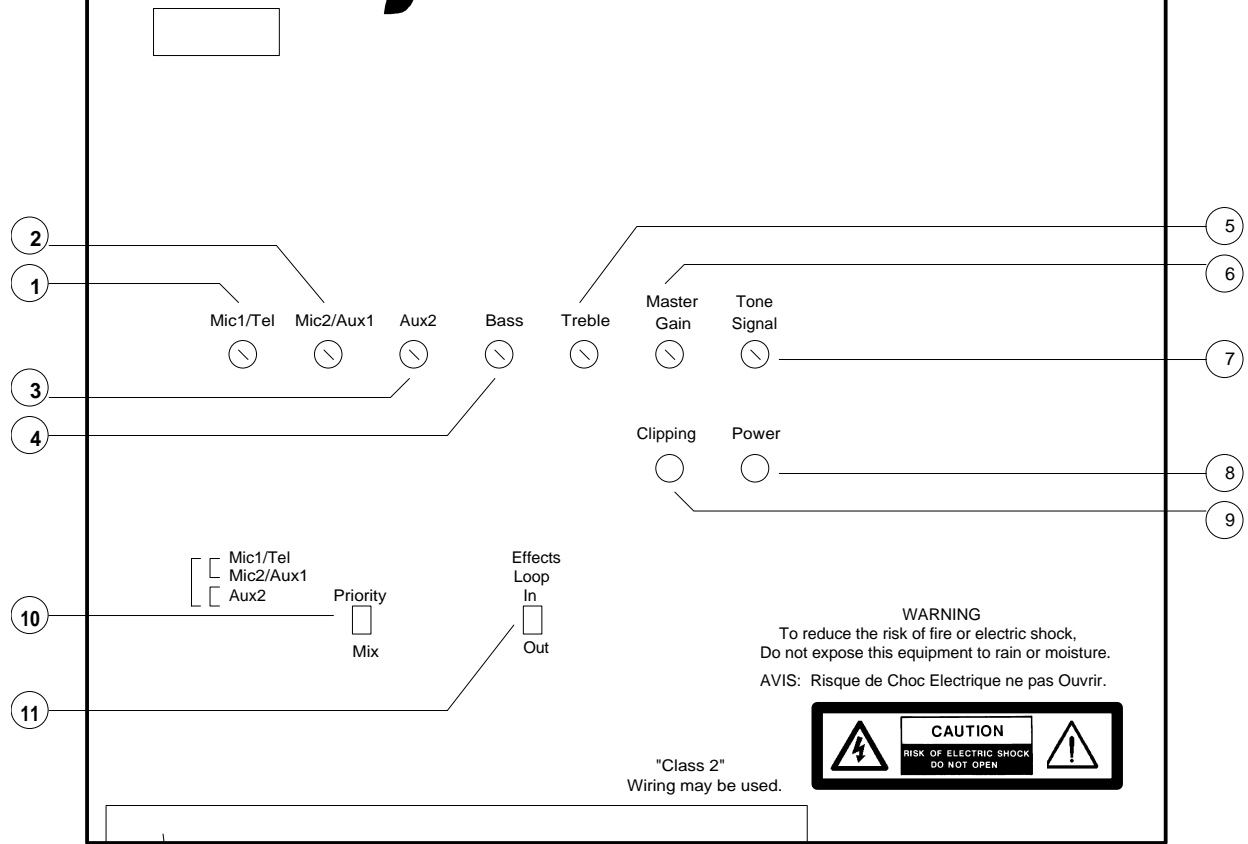
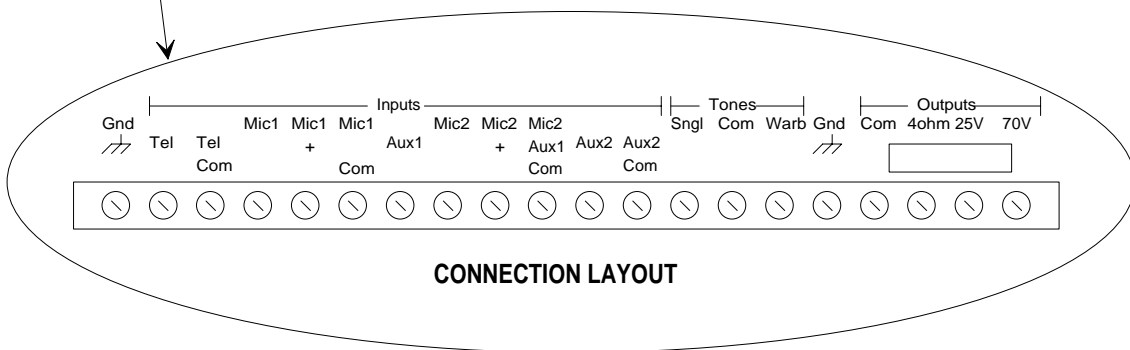


FIGURE 2

- 1 - Mic 1/Tel Volume Control
- 2 - Mic 2/Aux 1 Volume Control
- 3 - Aux 2 Volume Control
- 4 - Bass Control
- 5 - Treble Control
- 6 - Master Gain Control
- 7 - Tone Signal (Warble or Single Tone) Volume Control
- 8 - Power Indicator LED
- 9 - Clipping Indicator LED
- 10 - Mix/Priority Input Selection Switch
- 11 - Effects Loop Selection Switch



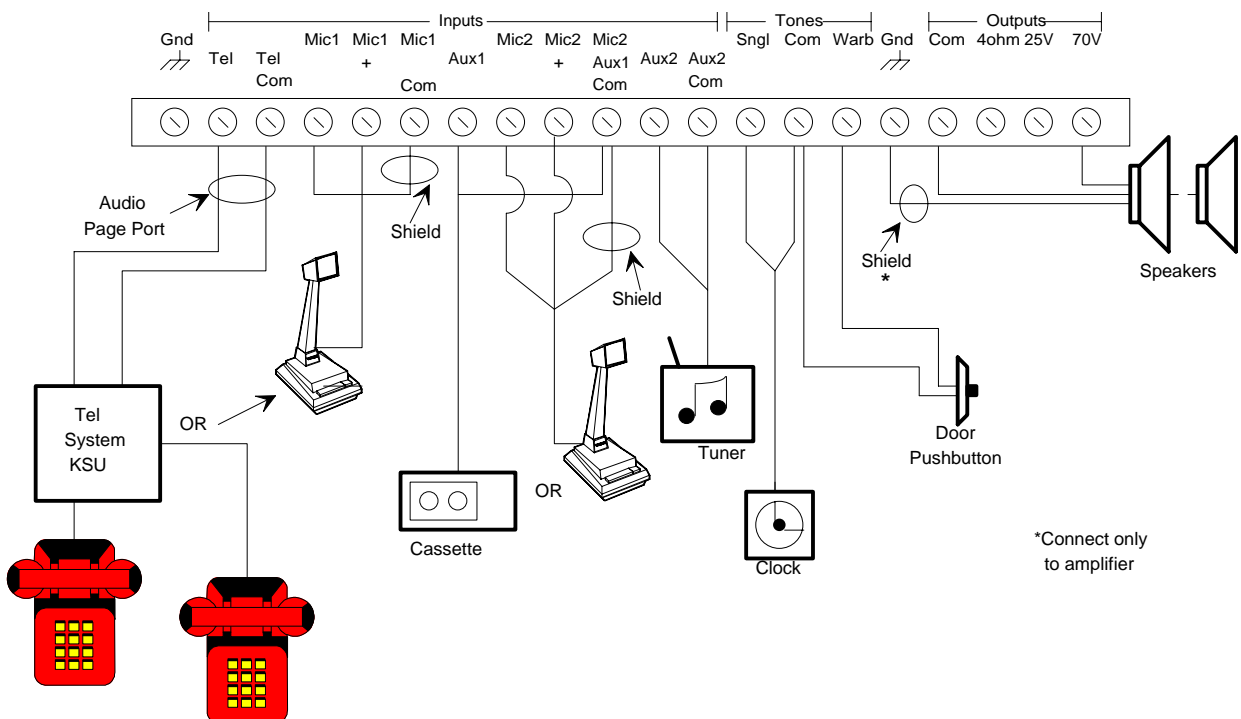


FIGURE 3 - CONNECTION DIAGRAM

LIMITED WARRANTY

Clarity warrants its products to be free from defects in materials and workmanship under conditions of normal use and service for a period of one year from the date of shipment. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period, provided that:

1. Inspection by Clarity indicates the validity of the claim;
2. The defect is not the result of damage, misuse, or negligence after the original shipment;
3. The product has not been in any way repaired by others and that factory sealed units are unopened (A service charge plus parts and labor will be applied to units defaced or physically damaged);
4. Freight charges for the return of products to Clarity are prepaid,
5. All units "out of warranty" are subject to a service charge. The service charge will cover minor repairs (Major repairs will be subject to additional charges for parts and labor).

This warranty is in lieu of and excludes all other warranties, expressed or implied, and in no event shall Clarity be liable for any anticipated profits, consequential damages, loss of time or other losses incurred by the buyer in connection with the purchase, operation, or use of the product.

This warranty specifically excludes damage incurred in shipment. In the event a product is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved in accordance with the F.O.B. point.

FIGURE 4
CONNECTING TO AN EQUALIZER
OR OTHER SIGNAL PROCESSING EQUIPMENT

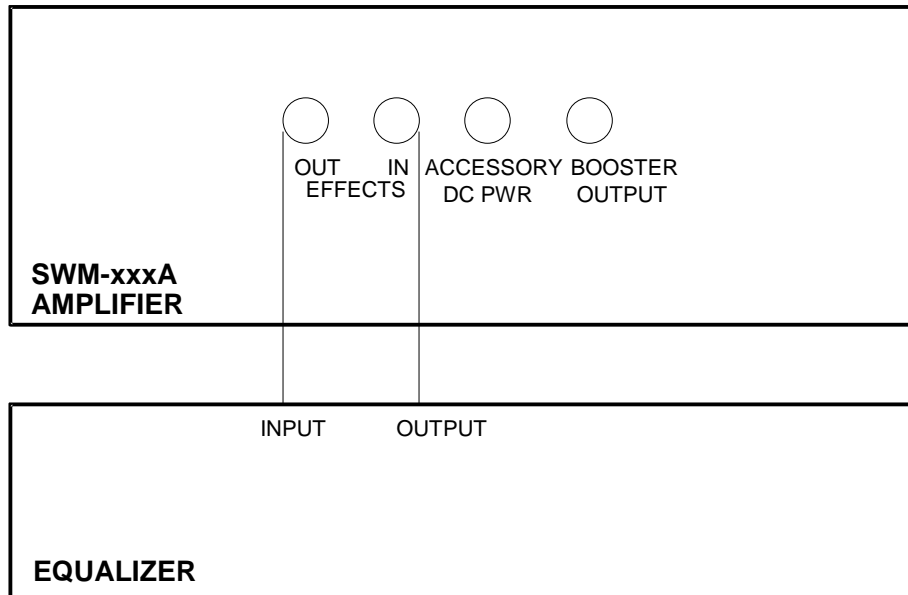


FIGURE 5
CONNECTING TO A POWER AMPLIFIER

