

## 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 $\pm$ 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

**947436**

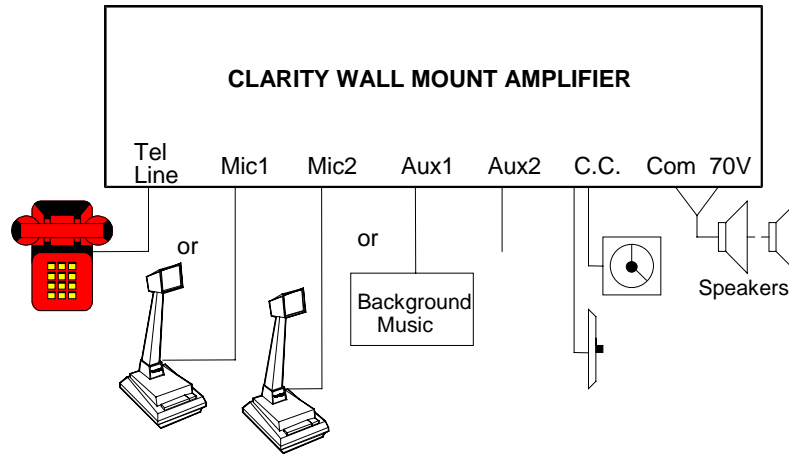


FIGURE 1 - BLOCK DIAGRAM OF A TYPICAL INSTALLATION

### 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.

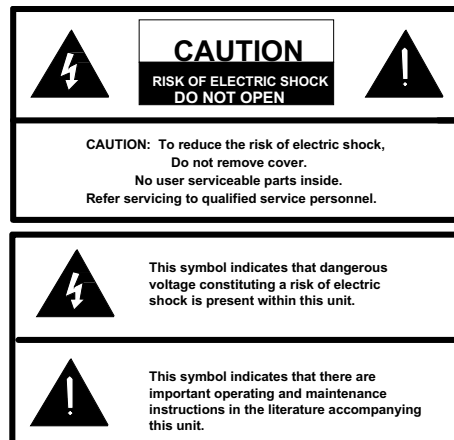
An "Effects Loop" is provided to allow connections of equalizers and other types of signal processing equipment. A slide switch on the front of the

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.

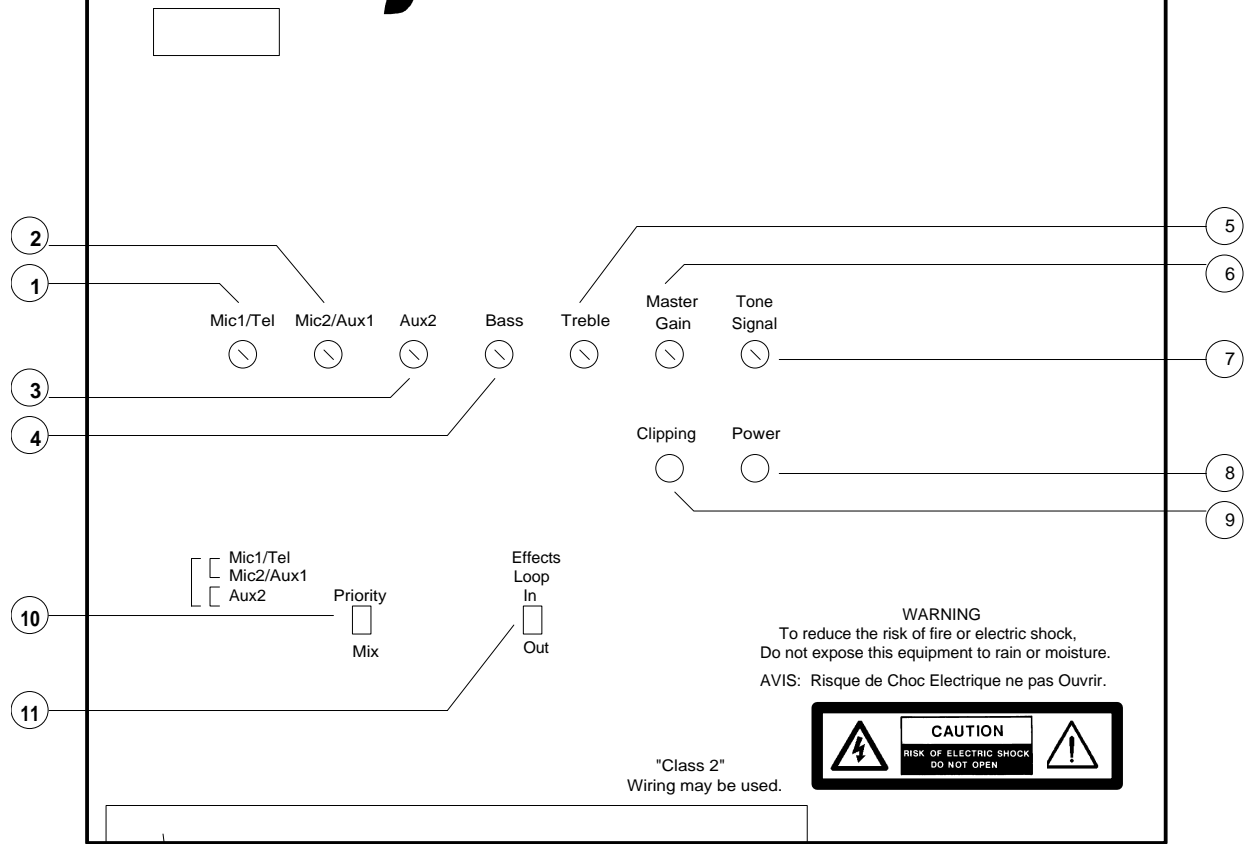
## **TECHNICAL ASSISTANCE**

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:

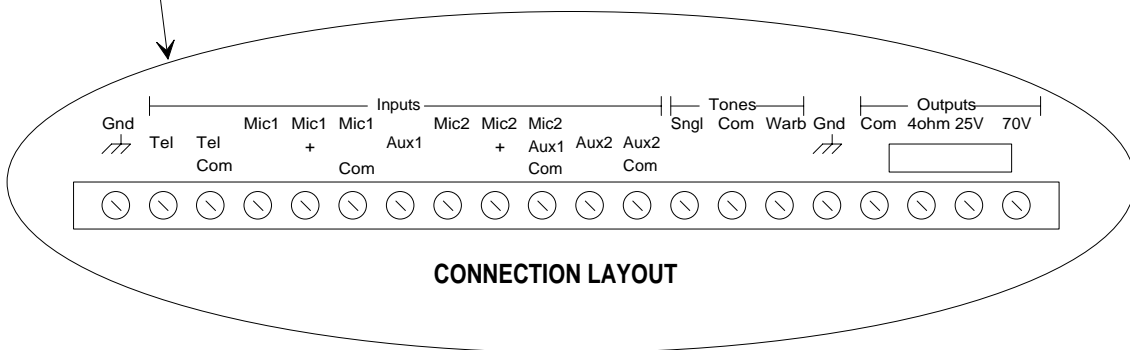
**Repair and Return Dept.  
Clarity  
5614 Hollins Road  
Roanoke, VA 24019-5056**

# Clarity®

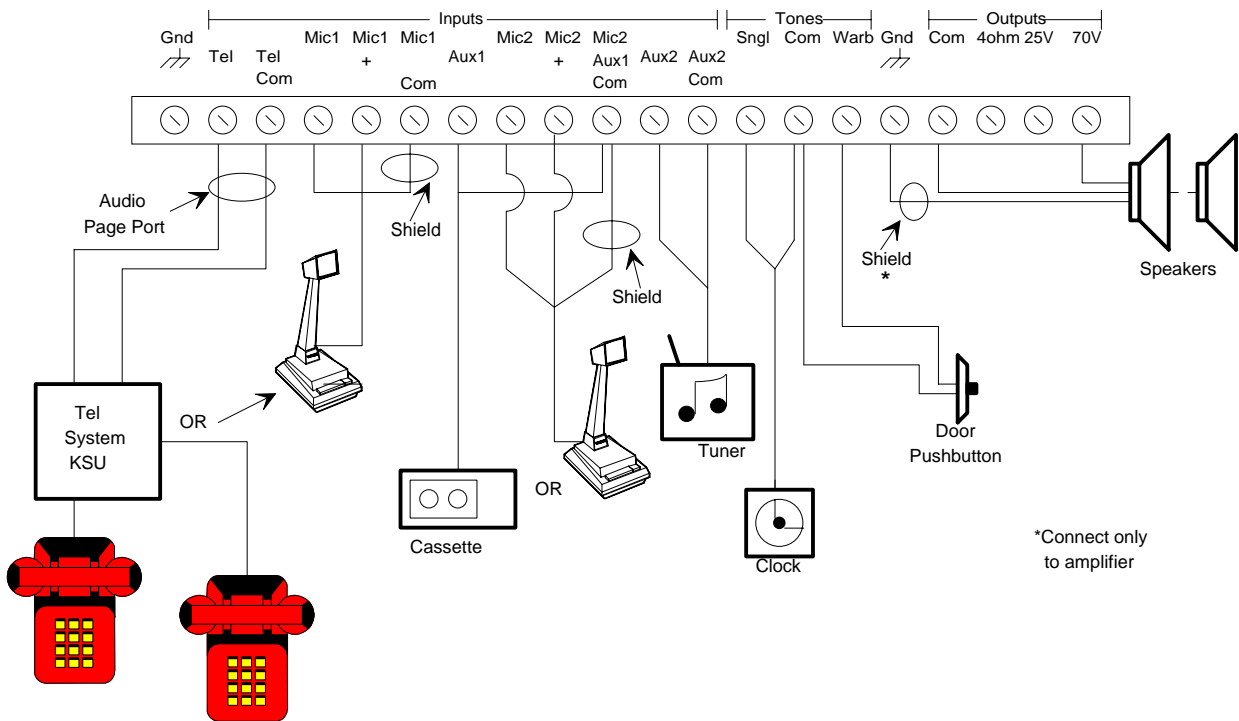


**FIGURE 2**

- 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



**CONNECTION LAYOUT**



**FIGURE 3 - CONNECTION DIAGRAM**

**LIMITED WARRANTY**

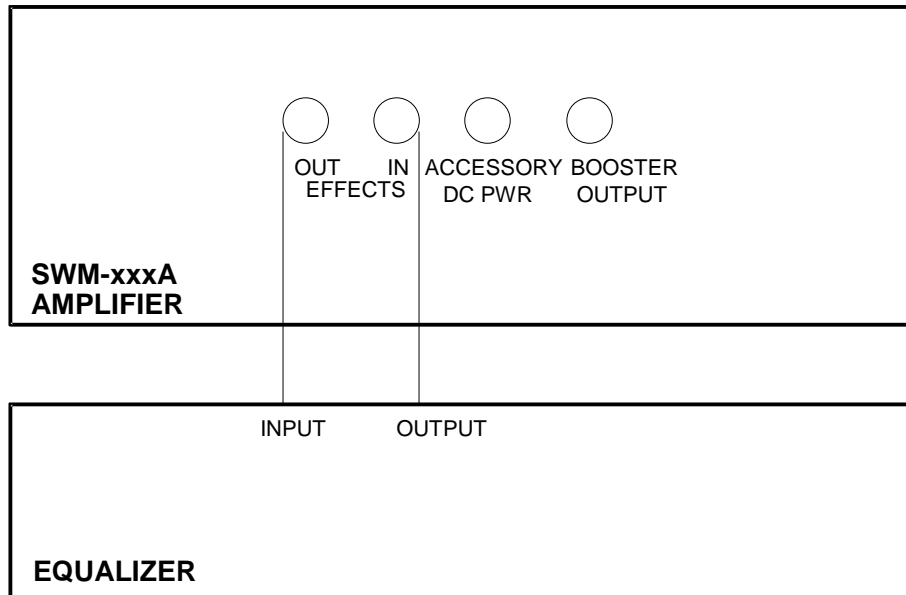
Clarity warrants its products to be free from defects in materials and workmanship under conditions of normal use and service for a period of one year from the date of shipment. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within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

