

Operating Instructions



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**SA60
&
SA120
Mixer Amplifiers**





Quality Endorsed Company
QEC#2143
ISO9002:1994

Audio Telex Communications Pty Ltd

ACN 001345482 Incorporated in NSW

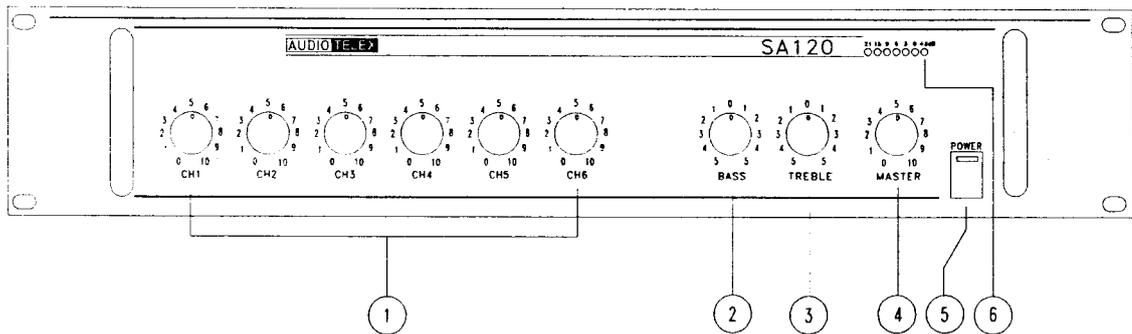
NSW & ACT	QLD & NT	VIC
149 Beaconsfield Street Private Bag 149 Silverwater NSW 2128 Australia Ph 02 9647 1411 Fax 02 9648 3698	42 Commercial Road PO Box 871 Fortitude Valley QLD 4006 Ph 07 3852 1312 Fax 07 3252 1237	22/277 Middleborough Road Box Hill VIC 3128 PO Box 151 Blackburn South VIC 3130 Ph 03 9890 7477 Fax 03 9890 7977
WA	SA	TAS
299 Fitzgerald Street West Perth WA 6005 PO Box 404 North Perth WA 6906 Ph 08 9228 4222 Fax 08 9228 4233	Electronic Concepts Pty Ltd 76 George Street Thebarton SA 5031 PO Box 7034 Hutt Street Adelaide SA 5000 Ph 08 8234 9444 Fax 08 8234 9441	K W McCulloch Pty Ltd 54a Albert Road Moonah TAS 7009 Ph 03 6228 6373 Fax 03 6278 1063
New Zealand		
Unit B, 11 Piermark Drive PO Box 512 Albany NZ 1331 Ph 09 415 9426 Fax 09 415 9864		

SA60 Mixer Amplifier & SA120 Mixer Amplifier

Product Description

The SA60 is a 60 watt, 6 channel mixer amplifier and similarly the SA120 is a 120 watt, 6 channel mixer amplifier. Both models operate from 240 VAC @ 50 Hz (or 110 VAC @ 60 Hz with factory modification) or 24 VDC via an external battery supply and both can either be desk or rack mounted. Both are 2 standard rack units high and standard rack width of 482mm, for table mounting rubber feet are supplied but these should be removed if rack mounting is intended. Both amplifiers will deliver their specified wattage into loads of 4 or 8 ohms, 70 or 100 volt line. Both models feature six dual purpose inputs, XLR balanced mic input and dual RCA aux/line level inputs. Channel 6 only has a higher level aux/line level input to enable it to accept a CD player or similar high level inputs. The SA series feature output overload protection, a TRS insert point between the mixer and amplifier stages for easy insertion of a graphic EQ, FBX Feedback Exterminator or similar, internal heat sinking and a strong steel chassis.

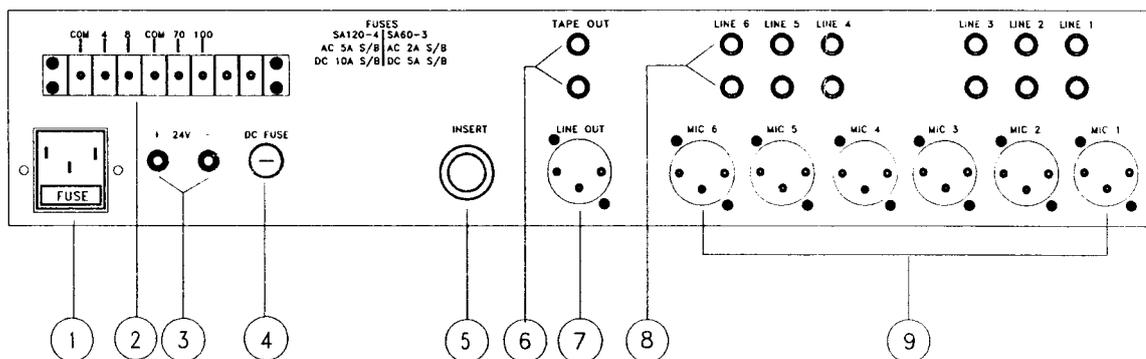
Front Panel Controls



(SA120 shown. The SA60 has identical front panel controls)

- Dual Microphone/Line Gain Controls:** The 6 dual mic/line input controls are marked Ch 1 through Ch 6 and should be adjusted to provide the required mix level for each individual channel. Start with the controls set to level 0 and turn the controls slowly clockwise until the desired mix for each channel is obtained.
- Bass Tonal Control:** Setting this control in the centre “zero” position will give an overall flat bass response to the output of the amplifier. Adjusting the bass control in a clockwise direction will provide up to +12 dB of bass boost @ 100 Hz. Adjusting the bass control in a counter-clockwise direction will provide up to -12 dB of bass cut @ 100 Hz.
- Treble Tonal Control:** Setting this control in the centre “zero” position will give an overall flat treble response to the output of the amplifier. Adjusting the treble control in a clockwise direction will provide up to +9 dB of treble boost @ 10 kHz. Adjusting the treble control in a counter-clockwise direction will provide up -9 dB of treble cut at 10 kHz.
- Master Output Control:** This control adjusts the overall output level of the amplifier depending on the levels set for the individual input mix channels as detailed above. Start with the control level set to level 0 and slowly turn the control clockwise until the desired output level of the amplifier is reached.
- Power Switch:** This switch controls the switching of the AC power to the amplifier. Rocking this switch upwards turns on AC power to the amplifier while rocking the switch downwards turns power off to the amplifier. When in the upward “On” position, the red neon in the body of the switch will glow.
- LED Display VU Meter:** Marked in decibel graduations from -21 dB to +3 dB, the light emitting diodes will indicate the volume level at the output of the amplifier. For normal operation the LED’s glow green as they modulate with the output level of the amplifier. If the lights are consistently indicating red the amplifier is being overdriven, resulting in distortion in the quality of the audio signal.

Rear Panel Connections



(SA120 shown. The SA60 does not have a 4 ohm output)

- 3 Pin IEC AC Mains Power Inlet:** The operating voltage is 240 VAC @ 50 Hz or 110 VAC @ 60 Hz. The AC power voltage is **not** externally user adjustable but is factory preset. The inlet is equipped with an inbuilt AC fuse holder fitted with a 4 amp slow blow fuse plus one spare. Power consumption is 350 watts. ⚠ **Please ensure that the mains power cord is disconnected before attempting to check or replace this fuse.**
 - Direct Output Connections:** These screw terminals allow access to the direct outputs of the amplifier. 2 spare screw terminals allow for the connection of various tone module accessories. Reading from left to right the terminals are-
 - Low Impedance Common
 - 4 Ohms (SA120 only. Not on SA60)
 - 8 Ohms
 - Constant Voltage Common
 - 70 Volt Line
 - 100 Volt Line
 - Spare
 - Spare
- Note: The minimum impedance level at any time on maximum load for 100 Volt line should be no less than 80 Ohms for the SA120 and no less than 170 Ohms for the SA60.
- 24 Volts DC Power Source Connection:** Two post style terminals allow for the connection of an external 24 VDC battery for applications where PA system operation is imperative. The red terminal post is for connection to the positive (+) terminal. The black terminal post is for connection to the negative (-) terminal. A trickle charge circuit provides a maximum 300mV automatically to a stand-by battery connected to the 24 VDC input on the SA120 only.
 - DC Fuse Holder:** Remove with a screwdriver if access is required. DC fuse rating is 10 Amps Slow Blow for the SA120 and 5 Amps Slow Blow for the SA60.
 - Insert:** TRS jack socket insert point (6.5mm). Enables a graphic equaliser, FBX Feedback Exterminator or similar product to be connected. Unbalanced insertion, breaks normal connection between the pre-amp and power amp stages of the amplifier. Tip = Return. Ring = Send. Sleeve = Ground.
 - Tape Output:** 2 x RCA style phono output connector for line level output. Provides a maximum of 350mV into 10K Ohms, ideal for a connection to most standard tape recorders. This output is sourced before the master gain control and as such, the tape output level is not influenced by the operation of the master gain control.
 - Line Output:** Male XLR style, balanced transformer isolated output for connection to additional power amplifiers. Provides a maximum of 700mV. Suitable for driving power amplifiers or similar devices. Pin connections are Pin 1 = Earth. Pin 2 = Active Positive (+). Pin 3 = Active Negative (-).

8. **Line Inputs:** **Note:** All inputs are universal line / microphone inputs. Both connectors can not be utilised for any one input. Six pairs of RCA style phono input connectors accept unbalanced line or auxiliary inputs for channels 1 through 6. Channel 6 accepts higher level inputs such as a CD player.
9. **Microphone Inputs:** **Note:** All inputs are universal line / microphone inputs. Both connectors can not be utilised for any one input. Six female XLR inputs accept 200 Ohm balanced or unbalanced microphone inputs. Pin connections are Pin 1 = Earth. Pin 2 = Active Positive (+). Pin 3 = Active Negative (-).

Special Facilities

Phantom Power: Normally supplied to each of the six XLR microphone inputs. Provides 18 Volts DC. An internal on/off slide switch can be found on the internal circuit board PCB6177 to disconnect phantom power from all six inputs. ⚠ **It is necessary to disconnect the power cord and remove the lid from the amplifier before operating this switch.**

Limiting: The SA series of amplifiers are equipped with a "soft knee limiter", which protects the amplifier from overload or short circuits. In some cases it may be desirable to disconnect the limiter to obtain *higher than rated* power. This can be achieved by removing a link on PCB6179, however this is not recommended. Performing this procedure will void any warranty claim. ⚠ **It is necessary to disconnect the power cord and remove the lid from the amplifier before attempting this procedure.**

Optional Accessories

⚠ **The installation of some of the following optional accessories involves access to the inside of the amplifier. Installation should only be attempted by a qualified technician. Always turn off the AC power and remove the AC power cord before attempting to access the inside of the amplifier. Please contact your nearest Audio Telex office for details of your nearest qualified technician.**

Tone Generators: Four separate tones are available as an option via the ATC5488 tone generator board. This internally mounted PCB is easily fitted and plugs directly into a socket provided on the internal circuit board PCB6178. Please follow the instructions supplied with the tone generator. When any tone from the ATC5488 PCB is activated all inputs will automatically mute except for input one.

Tones available on the ATC5488 tone generator board are:

Evacuation Tone (to Australian Standard AS2220.1.2)

Alert Tone (to Australian Standard AS2220.1.2)

Bell Tone

Pre Announce Chime

Voice Operated Muting Modules: Two separate models are available for the SA series amplifiers. They are easily fitted internally. Both plug directly into a socket provided on the internal circuit board PCB6178. The models are:

TX3014 Muting Module with Priority- Provides two levels of muting with priority for channel one, which mutes all other inputs and secondary priority for channel two, which mutes all other inputs except for channel one.

TX3010 Muting Module- Provides single muting from channel one only. When activated all other channels are muted.

Fuse Sizes SA120 Amplifier

Mains 240 VAC: 5 Amperes Slow Blow

DC: 10 Amperes Slow Blow

Fuse Sizes SA60 Amplifier

Mains 240 VAC: 2 Amperes Slow Blow

DC: 5 Amperes Slow Blow