

UNICOMP

AUDIO COMPRESSOR
OPERATORS MANUAL, REV. 3.3



ALTA MODA AUDIO

SAFETY INSTRUCTIONS AND WARNINGS



The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrow point in the equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in the equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get this unit wet. If liquid is spilled in the unit, unplug it immediately and return it to the manufacturer for service. Disconnect the unit during storms to avoid damage.

WARNING

FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Appliance should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

POWER SOURCES: The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING AND POLARIZATION: Precautions should be taken so that the grounding or polarization means of an appliance are not defeated.

POWER CORD PROTECTION: Power cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

SERVICING: To reduce the risk of electric shock or fire, the user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to the manufacturer.

FOR UNITS EQUIPPED WITH AN EXTERNALLY ACCESSIBLE FUSE RECEPTACLE: Replace fuse with same type and rating only.

MULTIPLE INPUT VOLTAGES: This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. Connect this equipment to the power source indicated in the equipment rear panel. To reduce the risk of fire or electric shock, refer service to the manufacturer.



WARNING: THIS APPLIANCE MUST BE EARTHED:

Do not disable or modify the chassis ground in any way. Doing so may place lethal voltages into the chassis under certain fault conditions. Do not ever use a "ground lift" or any other method or device which defeats the safety ground of this unit under any circumstances!

Quick Install Instructions

General installation points:

Connection: The inputs of this unit are electronically balanced, 3-pin XLR connectors. Pin 2 is hot, pin 3 is cold, and pin 1 is shield.

The output is a male XLR; pin 2 hot, pin 3 cold, and pin 1 is shield.

This is a single-ended output, meaning that signal is present only on pin 2 of the XLR. It is also an impedance balanced output in which the impedance at pin 3 of the output XLR is matched to pin 2.

As far as interconnecting to other devices; treat this output as a typical balanced output and connect in the same fashion as any balanced input/output device using typical shielding conventions.

Mounting: Proper ventilation is important for the longest service life of components, and it is recommended that the Unicomp be mounted with at least one full rack space above and below the unit. When not racked, be sure to allow adequate air flow through the unit. Space the unit up off the surface so that air can flow freely through its bottom. Do not place any thing on top of the unit which may restrict airflow through the chassis.

Getting started with the Unicom

Because of its versatility and extensive set of control features, some experimentation is in order to get the most performance out of the Unicom.

Important points to remember:

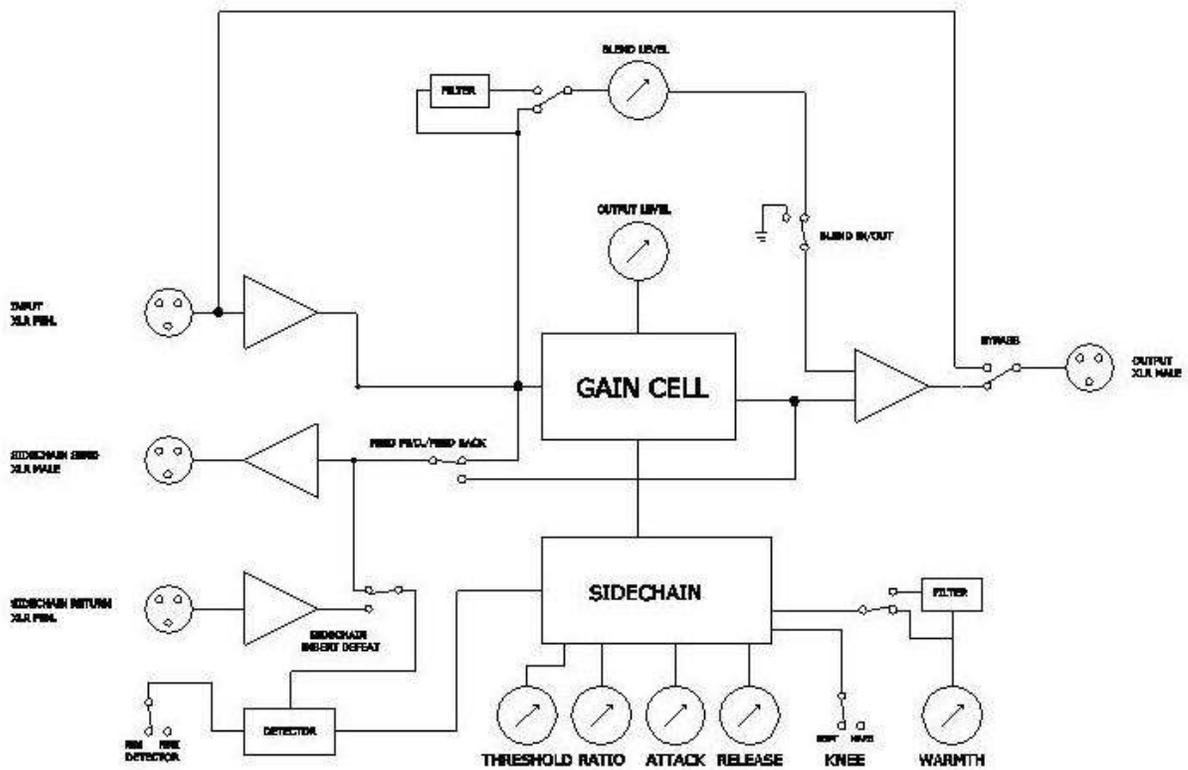
1. The scales on the Unicom's controls are labeled arbitrarily, usually from "0" to "10". This is because the controls can be somewhat interactive, and control scaling can change as different compression modes and features are selected.
2. The Blend control is not a mix control; it **does not** pan between 100% compressed signal and 100% dry signal. Instead, the compressed signal is always present and the Blend control mixes dry, input signal into the compressed signal at the output stage.
3. For units equipped with output potentiometers instead of rotary switches: Output level is unity (+4dB) when control is fully counter-clockwise, and increases gain as it is rotated clockwise.
4. The Feedback button completely changes the topology of the unit! Sometimes very subtly and sometimes it can be a drastic difference, depending on the audio signal's content and the relative positions of the other compressor controls.

A good starting point in working with the Unicom might be emulating the sound of a classic compressor topology:

1. Start with the Threshold turned fully C.W. (clock-wise).
2. Ratio fully C.C.W. (counter clock-wise)
3. Attack at "4"
4. Release fully C.C.W.
5. Drive off
6. Blend off
7. Knee in the "Soft" position (up)
8. RMS/Peak in the RMS position (out)
9. Feedback button in. (*This is the function that really characterizes the classic compression "sound"*).

Apply your audio signal and start rotating Threshold C.C.W. to begin compression. Experiment by varying the Ratio and Threshold together.

Try engaging the Blend control button and mixing some dry signal into the audio.

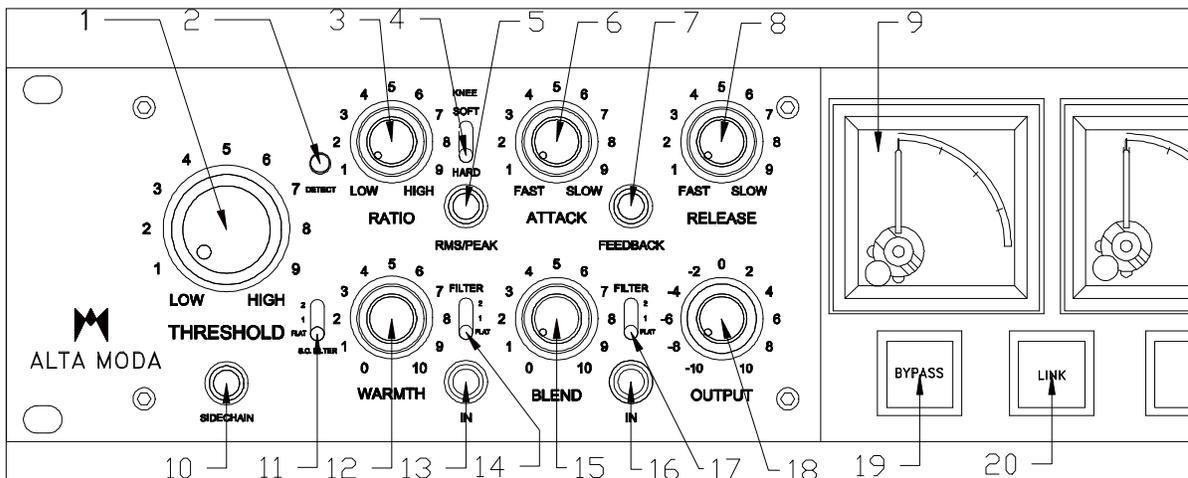


SIMPLIFIED SIGNAL FLOWCHART

GAIN CELL – Amplifier circuit which varies its gain in relation to an applied dc control voltage.

DETECTOR – Circuit which detects audio signal and converts it to a scaled dc voltage.

SIDECHAIN – Circuits and controls which process detector output signal and drive the control input of the gain cell.



CONTROL FUNCTIONS

1. **THRESHOLD** - Adjusts the signal level point at which compression begins. Turning the control clockwise raises this set point. The range of this control varies depending on operational mode selected. Typically, its range varies between -44dB to +25dB as control is turned clockwise.

2. **DETECT** - When illuminated, indicates that the signal threshold has been passed and that compression is occurring.

3. **RATIO** - Sets compression ratio; i.e. the ratio of the input level needed to increase the output level a specific amount.

4. **KNEE** - Affects how compression engages once the signal passes the threshold point. When selected to "HARD", compression starts immediately as the signal passes the threshold point. When the switch is in the "SOFT" position, the compression actually starts somewhat below the threshold point and increases gradually as the signal level increases. The threshold control moves the range over which this occurs.

5. **RMS/PEAK** - When switch is out, the detector is in RMS mode. RMS stands for root-mean-square, and is a mathematical averaging of the detected signal. In this mode, the detector is responding to the average level of the signal. When the switch is depressed (illuminated), the detector is responding to the peak level of the signal. The detector also responds faster while in peak mode.

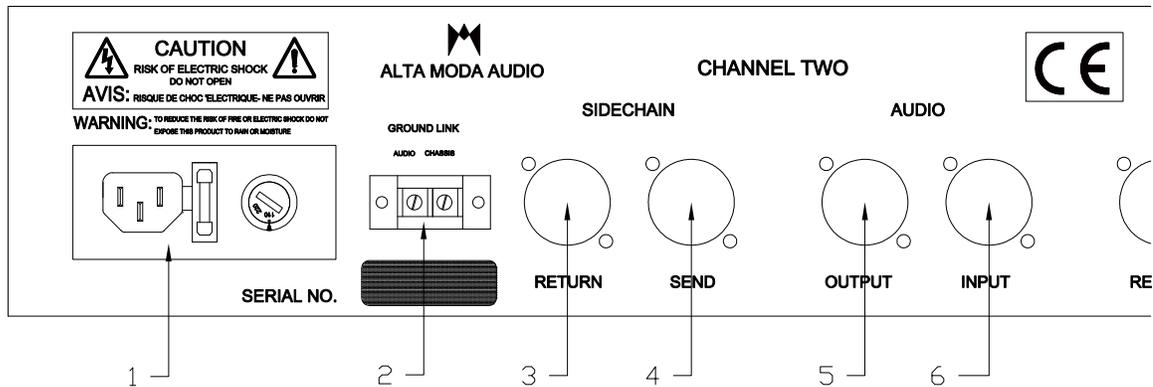
6. **ATTACK** - Sets the amount of time before the compressor reacts to the signal. Turning clockwise increases the amount of delay. This is a dynamic control which is affected by other control settings and modes.

7. **FEEDBACK** - Selects whether detector is receiving signal pre or post of the gain cell. When the switch is out, the detector receives signal pre-gain cell (FEEDFORWARD). When the switch is in, the detector receives signal post-gain cell (FEEDBACK).

8. **RELEASE**- Affects how long the gain cell takes to return to unity gain. Turning clockwise increases the amount of time the gain cell takes to return to unity after compression occurs. This is a dynamic control which is affected by other control settings and modes.

9. **Meter** - Indicates gain reduction on a decibel scale. Analog meters cannot accurately display peak responses, and typically indicate a lower level of compression than is actually occurring, especially with more percussive material.
10. **SIDECHAIN** - This switch inserts a "signal loop" into the detector path located on the back of the unit. This allows outboard processors to effect how the compressor reacts to signal. Techniques for using sidechain inserts are well covered in most practical recording references and should be referred to.
11. **SIDECHAIN FILTER** On later units, an additional switch has been added just below the Threshold control, to the right of the Drive control. Labeled S.C. Filter, it is a three-position switch which inserts a filter into the sidechain detector path. The filter points are approximately 120Hz and 400Hz.
12. **WARMTH-** (Renamed "Drive" on later units) Adds 2nd harmonic distortion to the gain cell. This distortion is at a constant level, but increases relative to the compressed signal; i.e. as compression increases, the ratio of distorted signal-to-compressed signal increases.
13. **IN (WARMTH)** - Engages (illuminated) WARMTH control.
14. **FILTER (WARMTH)** - In the "up" position, this switch rolls off the low frequency response of the Warmth generator, so higher frequency signals are less affected by lower frequency signal. In later units, this is a three-position switch; "off", 770Hz, and 1.3kHz.
15. **IN (WARMTH)** - Engages (illuminated) WARMTH control.
16. **BLEND** - Mixes uncompressed ("dry") input signal into the compressor output with the compressed signal ("wet"). Clockwise rotation increases the dry level from zero. As with the Warmth signal, the relative level of "dry" to "wet" will increase as compression increases.
17. **IN (BLEND)** - Engages (illuminated) Blend control.
18. **FILTER (BLEND)** - When in the "up" position, a high-pass filter is inserted into the BLEND signal path, mixing only higher frequency material in with the compressed signal. In later units, this is a three-position switch; "off", 280Hz, and 1.1kHz.
19. **OUTPUT** - 11-position rotary switch boosts or cuts output level in 2dB increments to compensate for lost overall signal level while compressing. Signal level is unity when control is centered.
20. **BYPASS** - This is a hard wire bypass. When engaged, effectively removes the compressor from the signal path by rerouting the signal input XLR jacks to the output XLR jacks.
21. **LINK** - Merges the outputs of the two detectors into a single signal that feeds the left-side sidechain which controls both gain cells. **IMPORTANT:** *In link mode, the lower controls are still independent. WARMTH, BLEND, AND OUTPUT controls still affect their respective channels independently.*

THE FOLLOWING INFORMATION PERTAINS TO UNITS EQUIPPED WITH A POWER ENTRY MODULE WITH A VOLTAGE SELECTOR SWITCH. IF A UNIT DOES NOT HAVE THE VOLTAGE SELECTOR SWITCH, IT IS HARD-WIRED FOR A PARTICULAR INPUT VOLTAGE AND CANNOT BE CHANGED.



- 1. Power entry module** - combination A.C. cord inlet, voltage selector and line fuse holder. For 120V operation, replace fuse with 500mA Slo-Blo fuse. For 240V operation, replace fuse with 250mA Slo-Blo type. Line voltage can be selected to operate at either 120V or 240V only. Insert proper A.C. line cord for selected input voltage.



WARNING: *Replace fuse with same type and rating specified for selected input operating voltage. Failure to do so can create a safety and/or fire hazard.*

Voltage Selection and Fuse Replacement

The fuse holder is located adjacent to the power cord socket (marked with the outlined shape of a fuse). Using a coin or screwdriver blade, pull on the tab (on power cord side of holder) and slide out. The fuse will be attached to the holder and can be easily replaced. Once a new fuse is placed in the holder, it can be slid back into the power module.

To select mains voltage, rotate rotary switch so that the proper mains voltage is aligned with arrow.



ATTENTION: *Be sure that voltage selector switch is set for the proper mains voltage and the proper type/rating fuse is installed before applying power to the unit.*

2. **Ground strap** - Removing this strap breaks the internal connection between the audio ground system and the chassis ground. If removed, a ground system wire must be attached to the audio ground (GND) point.



WARNING: *Do not disable or modify the chassis ground in any way. Doing so may place lethal voltages into the chassis under certain fault conditions. Do not ever use a “ground lift” or any other method or device which defeats the safety ground of this unit under any circumstances!*

3. **Sidechain return** – Return audio signal from an outboard sidechain processor. Nominal +4dB balanced input level. XLR female connector, pin 2 hot.
4. **Sidechain send** – Output audio signal sent from sidechain circuitry to an outboard processor. Electronically unbalanced/impedance balanced, +4dB nominal level. XLR male connector, pin 2 hot. Signal follows Feedback switch; i.e. signal is sent pre gain cell when in feedforward mode, and sent post gain cell when in feedback mode.
5. **Audio output** – Electronically unbalanced/impedance balanced male XLR connector, pin 2 hot.
6. **Audio input** – Electronically balanced, XLR female, pin 2 hot.