

AMISCL2

STEREO COMPRESSOR LIMITER
INSTALLATION & OPERATION MANUAL



INTRODUCTION AND CONTENTS

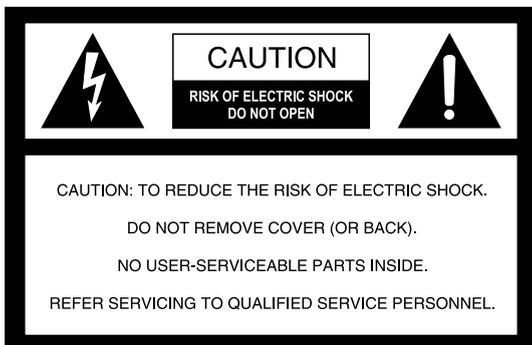
The Australian Monitor Pro Series AMISCL2 is a 1 RU, dual channel compressor limiter.

Featuring an expander/gate, compression and limiting per channel, the AMISCL2 utilises a high quality VCA to give excellent performance from a budget priced dynamics processor.

With added features like selectable Automatic attack and release times and EQ enhancement which automatically compensates for high end loss when heavy compression is taking place, the AMISCL2 has the features and the performance of a compressor/limiter many times the price.

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This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution:

To prevent electric shock do not use this (polarised) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure. To prevent electric shock, match wide blade of plug to wide slot, fully insert.

WARNING !

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK.
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

FRONT PANEL



1 POWER SWITCH

This switches the mains power "on" to the unit.

2 COMPRESSOR/LIMITER SECTION

Refer to inset box immediately opposite.

3 EXPANDER/GATE THRESHOLD

This control adjusts the threshold level of the expander/gate within a range from off (bypass) to +10dB. The Red LED glows when expansion occurs.

ENHANCER

14 ENHANCEMENT

Dynamic enhancement allows you to replenish any high frequencies lost through the compression process, for natural sounding dynamics control. This control allows you to vary the amount of dynamic enhancement added. Enhancement is only added when compression is taking place.



COMPRESSOR LIMITER SECTION

4 THRESHOLD

This controls threshold at which compression will start to occur. It has a range from -40 to +20 dBu.

5 RATIO

This control determines the compression ratio between the input and output level for all signals exceeding the threshold point. The ratio can be adjusted from 1:1 (unity gain) to infinity:1 (Limiting)

6 ATTACK

The attack control determines the speed at which the compressor will respond to signals that exceed the threshold. The attack range is from 0.1 to 200 milliseconds.

7 RELEASE

The Release control determines the amount of time it will take the compressor to return to unity gain after signal falls below the threshold level. This can be adjusted from 0.05 to 4 seconds.

8 AUTO IN

The Auto In switch disables the Attack and Release controls and controls these parameters automatically from

the program material. This function allows for unobtrusive musical compression of signals or mixes with widely varying dynamics.

9 OUTPUT LEVEL

This control allows for an increase or decrease of the output level by up to 20dB, thus allowing the user to compensate for any level loss due to the compression or limiting process.

10 IN/OUT SWITCH

This switch allows the compressor/limiter section to be bypassed. This makes A/B comparisons between original and processed material very simple.

11 GAIN REDUCTION METER

This 8 segment LED meter shows the actual gain reduction per channel and has a range from 0 to 30dB.

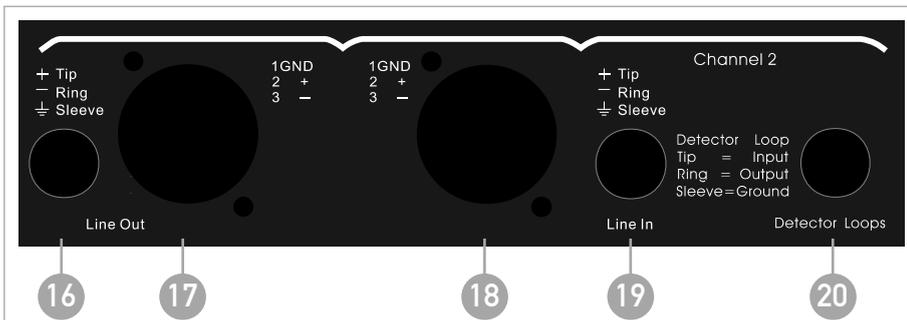
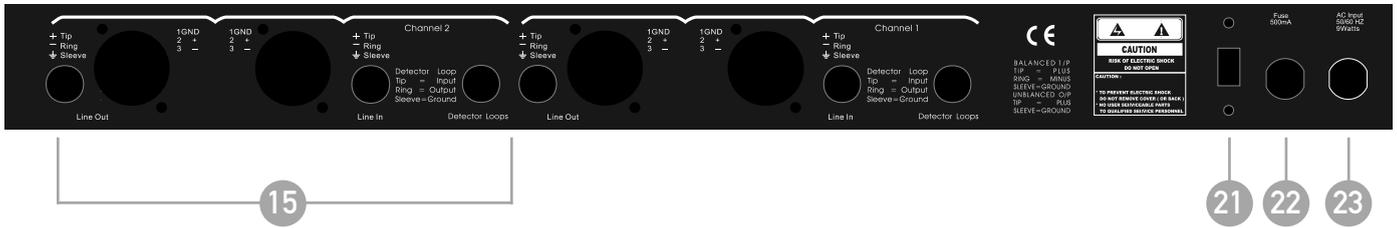
12 AUTO LED

This shows when the "Compressor Auto" function is active.

13 ACTIVE LED

This shows when the compressor/limiter is switched in.

REAR PANEL



CHANNEL DETAIL

16 TRS LINE OUT

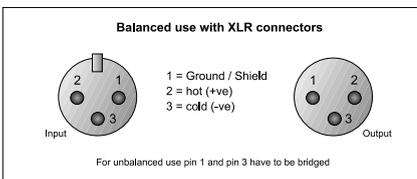
This 6.35mm TRS connector is a balanced or unbalanced line level output.

17 XLR LINE OUT

This XLR connector is a balanced line level output.

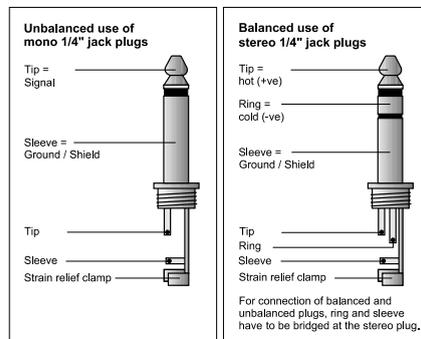
18 XLR LINE IN

This XLR connector accepts a balanced line level input.



19 TRS LINE IN

This 6.35mm TRS connector accepts a balanced or unbalanced line level input.



20 DETECTOR LOOP INSERT

This 6.35mm TRS jack allow for an equaliser or other processor to be inserted into the signal path. Note that the ring of the insert point is the send and the tip is the receive.

15 CHANNEL DETAIL

Refer to inset box below.

21 MAINS VOLTAGE SELECTOR

This switches mains voltage from 230VAC to 240VAC. Please ensure that this switch is set to the correct voltage for your part of the world.

22 FUSE HOLDER

Please note that the AC voltage selection is defined by the position of the fuse holder. If you intend to change the operating voltage, remove the fuse holder and twist 180 degrees before re inserting it. Matching the two markers monitors the selected voltage.

23 MAINS POWER LEAD

This connects to mains AC power. Please ensure that the correct voltage is set for your part of the world. (See 21)

SET UP AND OPERATION

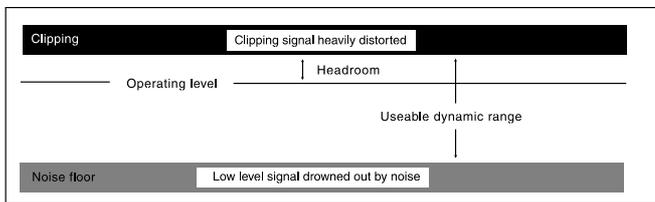


Fig 1 The interactive relationship between the operating level and the headroom

It is possible to further improve the audio quality by constantly monitoring the programme material with the aid of a volume fader, which manually levels the material. During low passages the gain is increased, during loud passages the gain is reduced. Of course it is fairly obvious that this kind of manual control is rather restrictive; it is difficult to detect signal peaks and it is almost impossible to level them out. Manual control is simply not fast enough to be satisfactory.

The need therefore arises for a fast acting automatic gain control system which will constantly monitor the signals and which will always adjust the gain to maximise the signal-to-noise ratio without incurring signal distortion. This device is called a compressor or limiter.

COMPRESSOR/LIMITERS

By measuring the dynamic range of musical instruments and microphones, you will find that extreme amplitudes will occur which will often lead to overload in subsequent signal processing equipment. These signal peaks can lead to heavy distortion. To avoid this kind of distortion or, for example, to avoid loudspeakers being damaged by overload, *Compressors* or *Limiters* are used.

The principal function used in these devices is dependent on an automatic gain control as mentioned in the previous section, which reduces the amplitude of loud passages and therefore restricts the original dynamics to a desired range. This application is particularly useful in microphone recording, to compensate for level changes which are caused by varying microphone distances.

Although compressors and limiters perform similar tasks, one essential point makes them different:

A *Limiter* abruptly limits the signal above a certain level, while a compressor controls the signal “gently” over a wider range. A limiter continuously monitors the signal and intervenes as soon as an adjustable level is exceeded. This level is called the threshold. Any signal exceeding this threshold will be immediately reduced back to the adjusted threshold level.

A *compressor* also monitors the program material continuously and has a certain threshold level. However, in contrast to the limiter, signals exceeding the threshold are not reduced abruptly but gradually. Above

the threshold, the signal is reduced in level, relative to the amount the signal exceeds this point. This gain reduction is set by the ratio control.

Generally, threshold levels for compressors are set below the normal operating level to allow for the upper dynamics to be musically compressed. For limiters, the threshold point is set above the normal operating level in order to provide reliable signal limiting and thus protect subsequent equipment.

EXPANDERS/NOISEGATES

Audio, in general, is only as good as the source from which it was derived. The dynamic range of signals will often be restricted by noise. Synthesisers, effects devices, guitar pickups, amplifiers etc generally produce a high level of noise, hum or other ambient background hiss, which can disturb the quality of the program material.

Normally these noises are inaudible if the level of the desired signal lies significantly above the level of the noise. This perception by the ear is based on the “masking” effect: noise will be masked and thus becomes inaudible as soon as considerably louder sound signals in the same frequency band are added. Nevertheless, the more the level that the desired signal decreases, the more the noise floor becomes a disturbing factor.

Expanders or noisegates offer a solution for this problem: these devices attenuate signals when their amplitudes drop, thereby fading out the background noise. Relying on this method, gain controlling amplifiers, like expanders, can extend the dynamic range of a signal and are therefore the opposite of a compressor.

In practice, it is shown that an expansion over the entire dynamic range is not desired. With an expansion ratio of 5:1 and a processed dynamic range of 30dB, an output dynamic range of 150dB will be the result, exceeding all subsequent signal processors, as well as human hearing. Therefore, the amplitude control is restricted to signals whose levels are below a certain threshold. Signals above this threshold pass through the unit unchanged. Due to continuous attenuation of the signals below this threshold, this kind of expansion is termed “downward” expansion.

The noisegate is the simplest form of an expander: in contrast to the expander, which continuously attenuates a signal below the threshold, the noise-gate cuts off the signal abruptly. In most applications this method is not very useful, since the on/off transition is too drastic. The onset of a simple gate function appears very obvious and unnatural. To achieve an inaudible processing of the program material, it is necessary to be able to control the signal's envelope parameters.

SPECIFICATIONS

AUDIO INPUT

Type	RF-filtered, Servo-balanced input stage
Impedance	60K Ω balanced
Nominal Operating Level	-10dBu to +4dBu
Maximum Input Level	+21dBu balanced and unbalanced
CMR @ 1kHz	>40dB

DETECTOR INPUT

Type	DC de-coupled, unbalanced input
Impedance	>20K Ω
Maximum Input Level	+21dBu

AUDIO OUTPUT

Type	Electronically buffered output stage
Impedance	<40 Ω
Maximum Input Level	+21dBu
Bandwidth	5Hz to 50kHz, +0, -1dB
THD @ +4dBu	0.05% typ.
THD @ +20dBu	0.1% typ.
IMD (SMPTE) @ +10dBu	0.01% typ.
Noise & Hum, unity gain	>93dBu
Noise & Hum, fully off	>97dBu
Crosstalk @ 20kHz	>85dBu
CMR @ 1kHz	>60dBu

COMPRESSOR SECTION

Type	IKC (Interactive Knee Control) Compressor
Threshold	Variable (-40 to +20dBu)
Ratio	Variable (1:1 to LIM.)
Attack	Variable (0.1 to 200 msec./20dB)
Release	Variable (-20 to +20dB)

GATE SECTION

Type	IRC (Interactive Ratio Control) Expander/Gate
Threshold	Variable (Off to +10dBu)

DYNAMIC ENHANCER SECTION

Type	Dynamically Controlled Frequency Correction
Process	Variable (Off to 6)

FUNCTION SWITCHES

In/Out	Bypass switch
Auto	Programme-dependent attack and release times

INDICATORS

CLOSE LED	LED indicates onset of the Expander/Gate
8 element GAIN REDUCTION meter	1/2/4/6/10/15/20/30dB

POWER SUPPLY

Mains Voltages	100-120/200-240 VAC 50-60Hz
Power Consumption	9 Watts
Fuse	320mA (100-120V); 160mA (200-240V) slow-blow
Mains Connection	Standard IEC receptacle

PHYSICAL

Dimensions H x W x D	13/4" (44.5mm) x 19" (482.6mm) x 8.5" (217mm)
Net Weight	3kg
Shipping Weight	4.3kg

As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or shown.

