



potion

API™ 500 Series Compatible Compressor Module

Users Manual



Thank you for choosing the Buzz Audio Potion True Class A FET Compressor. Please take the time to read this manual so that you are familiar with the operation of the unit.

To gain our Extended Warranty, please return the enclosed Registration Card or register your purchase online at www.buzzaudio.com

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1] Compatibility and Power

The Potion compressor module is designed to be installed into an API™ 500 Series compatible rack and cannot function stand alone, requiring the power source supplied by the rack system and the input/output connectors associated with the rack.

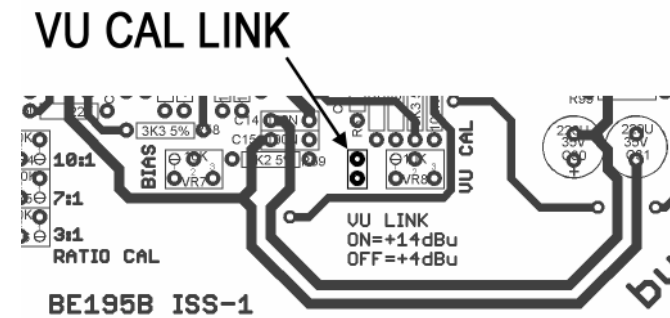
The current consumption of the Potion is rated at 120mA (milliamperes) at +/-15 volts DC. Because the Potion consumes 2 slots of the frame in which it is fitted, the power consumption is 60mA per slot. Most modern racks available will easily power a full compliment of Potion compressor modules. If in doubt, please consult your rack frame manufacturer.

For more information on the API™ 500 Series racks, visit the API™ website at www.apiaudio.com.

2] VU Meter Cal Option

Before installing the Potion into your 500 Series rack, you may wish to change the 0dB reference of the front panel VU meter. This can be set to read either +4dBu (VU meter standard, LINK OFF) or +14dBu (as supplied from the factory, LINK ON). The +14dBu setting is useful if the Potion is feeding a digital work station, as the levels will generally be higher than working with an analogue tape recorder.

VU Meter Cal Option continued...



Locate the LINK near the bottom of the top circuit board where it is printed "VU LINK". Remove or replace the link as required. No other adjustment is required.

3] Installation

Installation into the 500 Series rack is relatively straight forward. Ensure the rack is completely powered down before attempting installation to prevent damage to the module. Choose the position in the rack to which you will install the module and slide it in so that the gold plated edge connectors of the module align with the matching connectors in the rack. Note the Potion has 2 edge connectors that must mate with rack connectors. A gentle push and the module should slide home into the rack connectors.

Installation continued...

Please avoid touching the gold plated edge connectors of the module to prevent sweat from tarnishing the gold plate and thereby avoiding any connection reliability problems in the future.

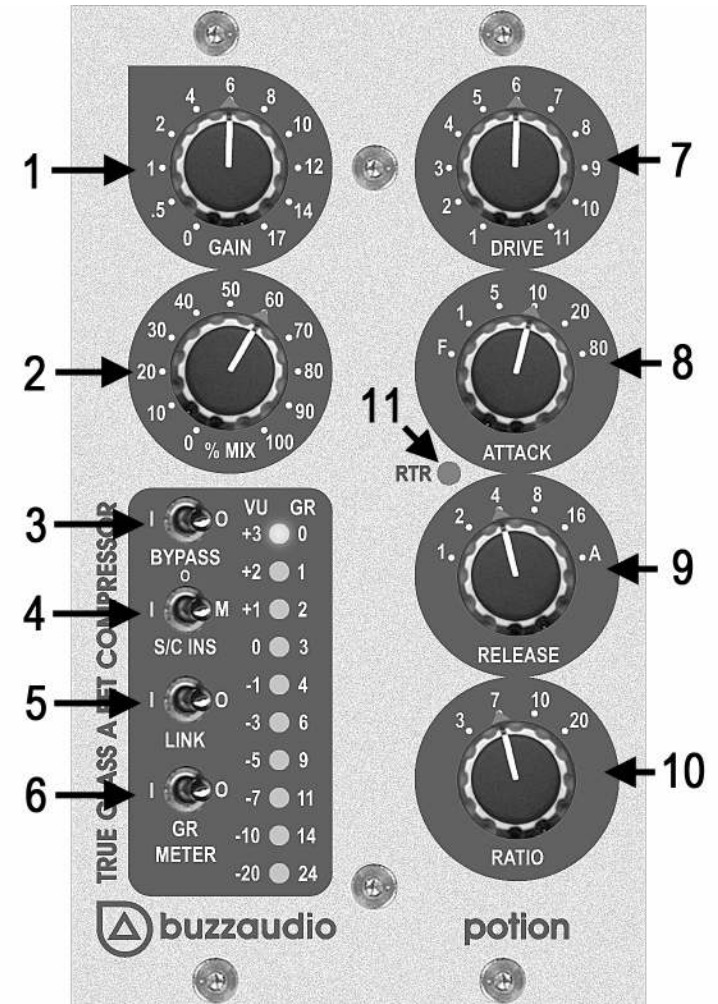
Attach the Potion front panel to the front of the rack with the screws supplied by your rack manufacturer. This is important for mechanical rigidity. Do not over tighten these screws to avoid stripping out the threads.

!! Important Note !!

The Potion consumes 2 slots within the 500 rack. If the unit is installed into slot 1 and 2 of the rack, the main audio input and output is accessed via the XLR connectors associated with slot 1. The XLR connectors associated with slot 2 can be used to insert another device (an equalizer for example) into the side chain path of the compressor. The male XLR is the send to the external device, the female is the return from the device. More on side chain insertion later in this manual.

Apply power, test that everything is working OK, and most importantly, enjoy!

4] Controls and Indicators



Controls and Indicators continued...

Please refer to the picture on the previous page.

[1] GAIN This rotary control varies the output gain of the Potion from 0 to +17dB and makes up for the loss associated with compression. This control is bypassed when using the **S/C INS-M** function (4).

[2] % MIX This rotary control allows you to mix or blend between the processed (compressed) or unprocessed (input) signals. It is provided as a creative control and there is no right or wrong setting. With the control fully clockwise (100%) the output is the compressor signal. With the control fully anticlockwise, the output is the Potion input signal only.

[3] BYPASS This switch completely removes the compressor from the audio path connecting the input directly to the output. The compressor is bypassed in the **I** (in) position and active in the **O** (out) position.

[4] S/C INS S/C is the abbreviation for Side Chain. This switch has 3 positions. In the centre position (**o**), the side chain (S/C) insert point is disabled. In the left position (**I**), the S/C insert point is enabled and signals entering the S/C return (female XLR, slot 2) will control the Potion. In the right position (**M**) the signal entering the S/C return is fed to the output of the Potion module so you can monitor the signal. This is useful if you have an equaliser inserted in the S/C path so you can hear the changes

Controls and Indicators continued...

you make. Note that in the monitor position (**M**), the Potion compressor is disabled as is the **GAIN** control.

[5] LINK This switch connects the Potion S/C to another Potion compressor adjacent in the rack for stereo operation. In order for this to work, there must be a link between pin 11 of the rack edge connectors. Please consult the rack manufacturer's instructions for setting up the link function in your rack.

!! IMPORTANT NOTE !!

The Potion should NOT be linked with any other type or brand of compressor – damage may result!

[6] METER Use this switch to monitor on the LED VU Meter the input level to the Potion (**I**), the output level leaving the Potion (**O**) or the amount of Gain Reduction (**GR**) being applied to the audio signal. The VU meter 0dB reference point (in **I** or **O** modes) can be set to either +4dBu (VU standard) or +14dBu (digital). See section 2 of this manual.

[7] DRIVE This rotary control is used to adjust the amount of compression applied to the audio signal, similar to a threshold control on other compressors. Clockwise rotation increases the amount of compression.

[8] ATTACK A six position switch which adjusts the attack time or time taken for the compressor to respond

Controls and Indicators continued...

to the incoming audio signal peaks. Position **F** is the fastest attack, with the Potion taking less than 50uS (micro seconds) to respond. The other 5 positions of the switch indicate the attack time in mS (milli seconds) to achieve 20dB of gain reduction.

[9] RELEASE A six position selector which adjusts the time taken for the compressor to recover from a program peak. The release times are **100mS**, **200mS**, **400mS**, **800mS**, **1600mS** and relate to the time taken to release from 20dB of gain reduction. The **A** position is the Auto mode whereby the compressor will release from fast transient signals quickly, but will maintain a slower release time with more continuous signals.

[10] RATIO This control adjusts the change in gain reduction for a given change in input signal level. The ratios are **3:1**, **7:1**, **10:1**, **20:1**. As an example, in position **10** a 10dB increase in input signal level will yield a 1dB increase in output signal level, being a ratio of 10:1. The Potion exhibits a "soft knee" at the lower ratio settings and the indicated ratio is achieved after about 5dB of gain reduction. Note that the **20:1** ratio setting is virtually hard limiting.

[10] RTR The Potion has a special circuit we call **Release Time Reduction** which automatically adjusts the release time of the compressor depending on the attack depth. This function prevents the compressor from

Controls and Indicators continued...

sounding bad or "pumping" when using fast attack times and heavy compression. The **RTR** LED will light when this circuit is modifying the release time.

5] The Side Chain Insert

This function has numerous uses including inserting a more elaborate equalizer into the Potion side chain or for "keying" the compressor. For example, by inserting a 1/3 octave graphic equalizer, very narrow band compression to clamp a troublesome resonance on a bass track is possible. Or, by using fast attack and release times and boosting around 6-20Khz on the graphic, vocal de-essing is possible.

Keying involves using a particular sound to reduce the volume of another sound. As an example, a guitar track could be made to reduce in volume with the vocal track by passing the guitar through the Potion main audio path and feeding the vocal track into the side chain insert return. With appropriate adjustments, the guitar track will get quieter when the vocal is present. All sorts of similar effects are possible.

6] A Word About Noise

The Potion compressor uses a Field Effect Transistor (FET) as the gain reduction element, as found in some classic vintage compressors. The sound of the FET when used for compression is seen by many as being desirable for modern music styles where the distortion characteristic adds harmonic content to the signal. One disadvantage of using the FET is that the input signal must be attenuated to a sufficiently low level to prevent gross distortion and then amplified back up to a usable line level.

The additional gain required results in increased noise compared to a compressor that does not need attenuation of the input. The Potion uses a discrete Class A amplifier for this gain and therefore has the best possible noise performance obtainable under the circumstances.

If you experience problems with excessive noise when using the Potion, this can be overcome by increasing the signal level you are feeding into it. For example, if you are recording via a mic preamp and using the Potion for compression of the track, increase the gain of the mic preamp and readjust the settings of the Potion to compensate. The less make up gain you use, the quieter the Potion will be.

7] Specifications

Frequency Response no gain reduction = 17Hz to 57kHz, +/- 1.5dB

Maximum Input Level = +25dBu

Maximum Output Level = +27dBu

Total Harmonic Distortion

0dBu input, no gain reduction, make up Gain 0dB

100Hz = 0.15%, 1kHz = 0.02%, 10kHz = 0.015%

0dBu input, 10dB gain reduction, Attack Fast, Release AUTO

100Hz = 0.9%, 1kHz = 0.16%, 10kHz = 0.08%

+10dBu input, 20dB gain reduction, Attack FAST, Release AUTO

100Hz = 2.5%, 1kHz = 0.3%, 10kHz = 0.13%

NOTE - distortion at low frequencies will reduce when using slower release settings.

Residual Noise = -80dBu A wtg, 150ohm source, make up Gain 0dB

Make up Gain Range = 0dB to +17dB

Maximum Available Gain Reduction = 40dB

Main Audio Input Impedance = 13k ohms, bal or unbal

Main Output Impedance = 100 ohms bal or unbal

Sidechain Send Output Impedance = 100 ohms unbal

Sidechain Return Input Impedance = 44k ohms bal or unbal

Sidechain Max Input/Output Levels = +22dBu

Size = (3"Wx5.25"H). Fits 2 spaces in API* 500VPR Series rack format

Power requirements = 120mA +/- 15-18 volts DC, as supplied by rack power supply.

Specifications are typical of a production unit and are subject to change without notice because we might be able to make it slightly better. 0dBu reference = 0.775 volts RMS.

8] Warranty and Service

We are confident that you will receive many years of trouble free operation from your unit. If however you experience any technical problem with your Potion, contact your dealer or Buzz Audio for recommendations on what to do.

For on line support visit our web site;
www.buzzaudio.com and click on Users Area

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•Disclaimer

Buzz Audio is not liable for any damage to microphones, amplifiers, consoles, speakers or any other equipment and/or electric shock to humans that is caused by negligence or improper installation and/or use of the Potion compressor module.

•Standard Product Warranty

Buzz Audio guarantees the Potion to be free of defective materials and/or workmanship for a period of 1 year (12 months) from the date of sale, and will replace

Warranty and Service continued...

defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use – provided the unit is returned to our factory (or duly authorised service centre) via prepaid transportation with a copy of the proof of purchase, ie, sales receipt. This warranty provides that examination of the returned product must indicate, in our judgement, a manufacturing defect. This warranty does not extend to any product that has been subjected to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced. The standard warranty is NOT transferable.

•Product Warranty Extension

The above Warranty may be extended to a period of 2 years (24 months) from date of sale provided the enclosed Warranty Registration card is completed and returned to the office of Buzz Audio within 4 weeks (28 days) from purchase date. Alternatively, you may Register your purchase on-line at our web-site www.buzzaudio.com. The Extended Warranty is transferable to the new owner if you on sell the unit during the warranty period.

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