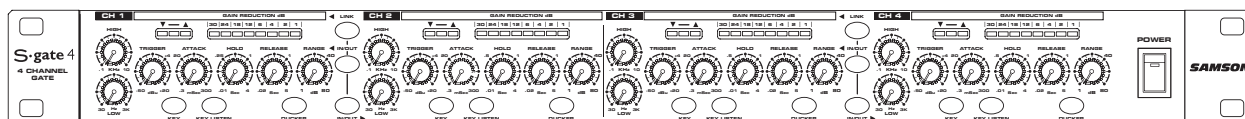


# S·gate 4



4 CHANNEL GATE

## Owners Manual

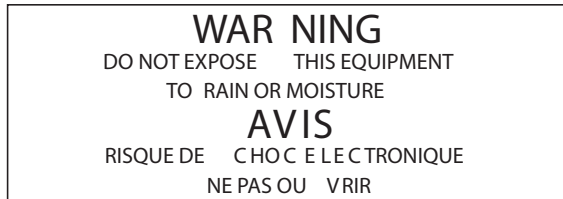
2

**SAMSON**<sup>®</sup>

# Safety Instructions

**Caution:** To reduce the hazard of electrical shock, do not remove cover or back.

No user serviceable parts inside. Please refer all servicing to qualified personnel.



**WARNING:** To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

The lightning flash with an arrowhead symbol within an equilateral triangle, 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.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

## Important Safety Instructions

1. Please read all instructions before operating the unit.
2. Keep these instructions for future reference.
3. Please heed all safety warnings.
4. Follow manufacturer's instructions.
5. Do not use this unit near water or moisture.
6. Clean only with a damp cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. When the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on and pinched, particularly at plugs, convenience receptacles and at the point at which they exit from the unit.
11. Unplug this unit during lightning storms or when unused for long periods of time.
12. Refer all servicing to qualified personnel. Servicing is required when the unit has been damaged in any way, such as power supply cord or plug damage, or if liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

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# Introduction

Congratulations on your purchase of the Samson S Gate 4! The S Gate 4 is a four channel Expander/Noise Gate with frequency sensitive triggering, offering unparalleled control and sonic transparency impressing the most critical listeners. Never before have so many features been packed into a single rack space unit with four noise gates - period. The S gate 4 is a powerful tool for live sound and recording, enabling you to clean up your mix by eliminating hums, buzzes, noisy tracks and microphone bleed. S Gate 4's DFT (Dual Filter Trigger) enables pinpoint accuracy by letting you control the exact frequency that will open the gate. A full complement of envelope controls including Threshold, Attack, Release, Hold and Range facilitate a wide range of applications from a subtle clean up of a vocal track, to a drastic effect like gating reverb chambers.

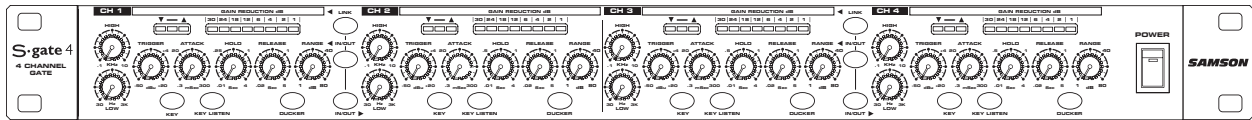
With proper care and adequate air circulation, your S gate 4 will operate trouble free for many years. We recommend you record your serial number in the space provided below for future reference.

Serial number:

Date of purchase:

Should your unit ever require servicing, a Return Authorization number (RA) must be obtained before shipping your unit to Samson. Without this number, the unit will not be accepted. Please call Samson at 1-800-3SAMSON (1-800-372-6766) for a Return Authorization number prior to shipping your unit. Please retain the original packing materials and if possible, return the unit in the original carton and packing materials.

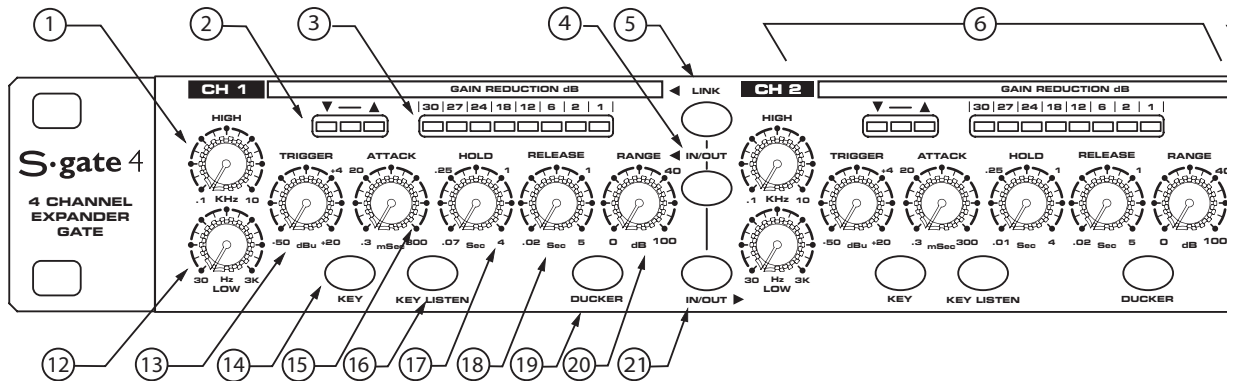
# S gate 4 Features



The Samson S gate 4 dynamics processor utilizes the latest technology in gain management design. Here are some of its main features:

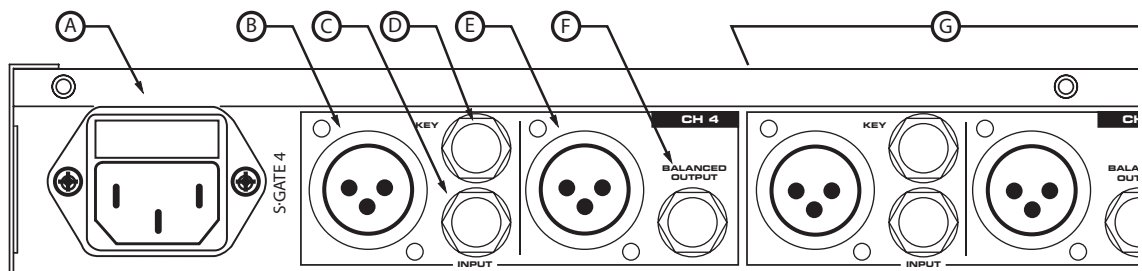
- Full featured, four channel Noise Gate with Expander and Ducker on each channel in a single space, 19" rack mount unit.
- Extensive envelope control including Threshold, Attack, Hold and Release control for each channel.
- DFT (Dual Filter Trigger) for precise and predictable triggering.
- Range control for Ducking.
- Three stage Gate Open and Closed LED display.
- Key input with Key Listen switch on each channel.
- Eight Segment Gain Reduction Meter.
- Stereo Link Switch for channels 1 & 2 and 3 & 4.
- Advanced circuit design, utilizing low noise operational amplifiers and high quality VCAs.
- Servo balanced inputs and outputs on XLR and 1/4" connectors.
- High quality 41 position detent pots and backlit switches.
- Internal Transformer.
- Heavy-duty construction providing reliable performance session after session, performance after performance.
- The stylish bead blasted, electric blue anodized front-panel is as easy to read as it is to look at.
- Three-year extended warranty.

# S gate 4 Front Panel Layout



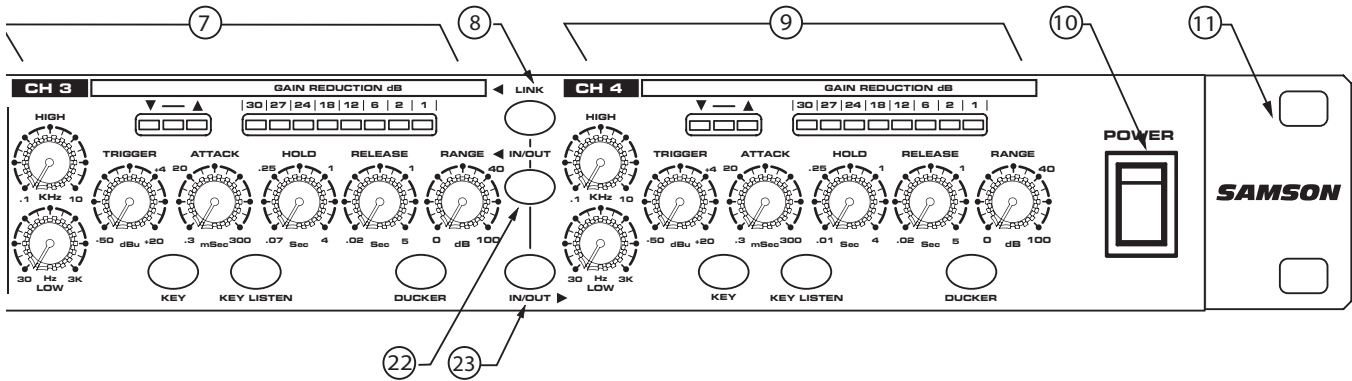
- 1 **HIGH FILTER CONTROL** - Used to set the upper frequency at which the 12dB cut is applied to the side chain input, covering a range from .1 to 10 KHz.
- 2 **GATE OPEN & CLOSED METER** - Three segment LED Meter indicating the GATE status. Green when Open, Yellow when approaching threshold and Red when closed.
- 3 **GAIN REDUCTION METER** - Eight segment LED meter displaying the amount of Gain Reduction when Expander/Gate circuit is activated.
- 4 **CHANNEL 1 IN/OUT SWITCH** - Activates S gate 4's Channel 1.
- 5 **STEREO LINK SWITCH** - When engaged Channel 2 functions are controlled by the settings on Channel 1.
- 6 **CHANNEL 2 CONTROLS** - The same knob and switch complement as Channel 1.
- 7 **CHANNEL 3 CONTROLS** - The same knob and switch complement as Channel 1.
- 8 **STEREO LINK SWITCH (3 & 4)** - When engaged, channel 4 functions are controlled by the settings on channel 3.
- 9 **CHANNEL 4 CONTROLS** - The same knob and switch complement as Channel 1.
- 10 **MAINS POWER SWITCH** - When turned on, activates the S gate 4.
- 11 **RACK EARS** - Used for mounting into a 19 inch standard rack. (One on each side.)
- 12 **LOW FILTER CONTROL** - Used to set the lower frequency at which the 12dB cut is applied to the side chain input, covering a range from 30Hz to 3KHz.
- 13 **TRIGGER** - Used to set the minimum signal level that the Gate/ Ducker circuit begins to function in a range from -60 to +10 dB.

## Rear Panel Layout



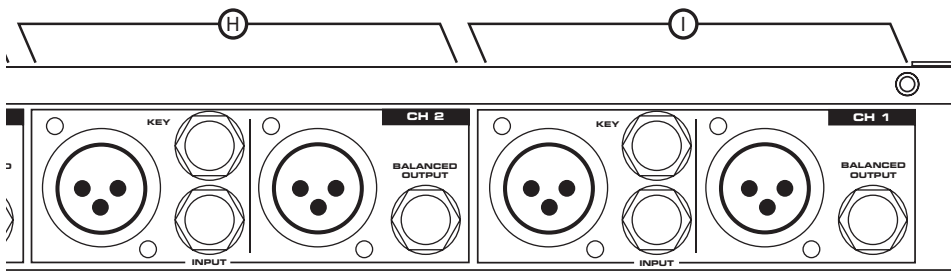
- A **AC INLET** - IEC standard AC power cable connector with external fuse.
- B **CHANNEL 4, XLR LINE INPUT** - XLR Balanced line input.
- C **CHANNEL 4, 1/4" TRS LINE INPUT** - 1/4" TRS Balanced line input.
- D **KEY INSERT** - The gate trigger signal can be external processed, or an external key signal can be inserted here.

# S gate 4 Rear Panel Layout



- 14 KEY SWITCH** – When engaged the Key insert is enabled allowing the trigger signal to be externally processed or externally controlled.
- 15 ATTACK** - Adjusts the amount of time, from .3 to 300 milliseconds, that the Gate/Ducker takes to become fully open.
- 16 KEY INSERT**– TRS Send and Return allowing for external control and processing of the channel's Side Chain.
- 17 HOLD CONTROL** - Used to set the amount of time before the gate starts to close with a variable range of .01 to 4 seconds.
- 18 RELEASE CONTROL** - Adjusts the length of time the gate takes to return to the level set on the Range control covering a range of .02 to 5 seconds.

- 19 DUCKER SWITCH** – Configures the channel for Ducking.
- 20 RANGE** – Adjusts the level of maximum attenuation, from 0 to 100dB.
- 21 CHANNEL 2 IN/OUT SWITCH**- Activates S gate 4's Channel 2.
- 22 CHANNEL 3 IN/OUT SWITCH**- Activates S gate 4's Channel 3.
- 23 CHANNEL 4 IN/OUT SWITCH**- Activates S gate 4's Channel 4.



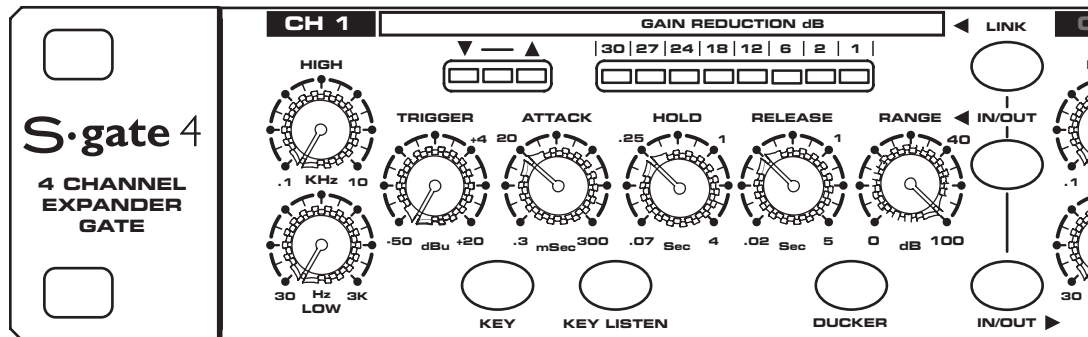
- E CHANNEL 4, XLR LINE OUTPUT** - XLR Balanced line output.
  - F CHANNEL 4, 1/4\"/>**
- G CHANNEL 3** - Same Inputs and Outputs as Channel 4.
  - H CHANNEL 2** - Same Inputs and Outputs as Channel 4.
  - I CHANNEL 1** - Same Inputs and Outputs as Channel 4.

# Operating The S gate 4

Whether you are an experienced audio engineer, just starting out, or you just want to experiment, follow the steps below to get going. Further sections in this manual will cover basic dynamics and the associated parameters, system set-ups and applications for using dynamics processing in recording and live sound applications.

## SETTING UP THE S gate 4

- Connect one set of inputs and outputs to the Channel 1 connectors on the rear panel. If possible, use your mixer insert points to connect the S gate 4. For a detailed wiring, guide see page 16 in this manual.
- Set the controls to the following positions:



HIGH FILTER CONTROL - .1  
LOW FILTER CONTROL - 30  
TRIGGER CONTROL - -60  
KEY SWITCH - OUT  
ATTACK CONTROL - 20  
KEY LISTEN - OUT

HOLD CONTROL - .5  
RELEASE CONTROL - .5 SEC  
DUCKER SWITCH - OUT  
RANGE CONTROL - 80  
IN/OUT - OUT

In this configuration, the S gate 4 is simply passing audio at unity gain with no dynamics processing. It is a good idea to check your gain structure at this point. Use the Gain Reduction meter to match the level.

- Send a signal to the S gate 4's inputs.
- Look at the GAIN REDUCTION meter and confirm that no LED's are illuminated.
- Press the IN/OUT switch on and off and listen to the signal. You should hear no change in level.



# Operating The S gate 4

## GATING A SIGNAL

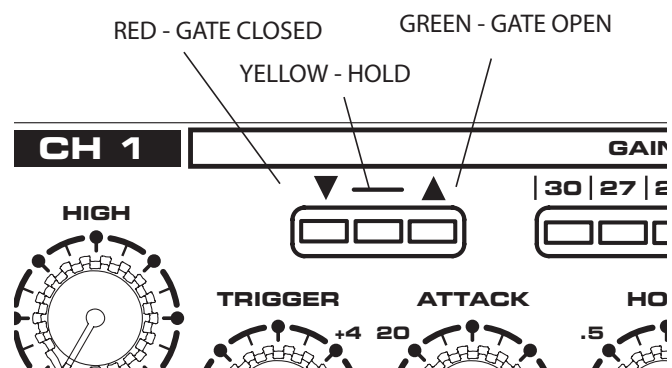
Unwanted noises, buzzes and hisses can be easily removed by using S gate 4. The idea is to have the Gate open only when the sound you want to hear is playing and to mute off and eliminate (Gate closed) the unwanted noises, buzzes and hisses.

Below is a step by step example on gating a signal with the S gate 4. A CD with a sample of a snare drum hit with reverb, or a drum machine is a good signal source for the purpose of this test example, however you can use any audio source. To Gate your signal, do the following:

Follow the previous section, "SETTING UP THE S gate 4" for normalizing the controls.

- To engage the Gate, make sure that the IN/OUT switch is pressed in and that the green LED is illuminated.
- Now with your sound source playing, increase the TRIGGER level and listen as the signal begins to gate.

**NOTE:** For a visual representation of the gate activity, look at the GATE OPEN/CLOSED DISPLAY located above the TRIGGER control. The display has three LED segments indicating gate open, hold time and gate closed.



- To get the gate to operate fast, smoothly and predictably use the ATTACK, HOLD and RELEASE controls to contour the shape.

In theory, the ideal gate settings would open the gate as fast as possible when the desired signal is on and close the gate as fast as possible when the desired sound is off. The problem is that when the gate is opening and closing, it is putting a new envelope on the hiss, buzz and noise you are trying to remove. This results in unwanted sounds like pops and zips. DON'T SWEAT! You can get rid of these unwanted noise artifacts by adjusting the ATTACK, HOLD and RELEASE controls.

In order to get the best results, the S gate 4's envelope controls include a HOLD time control. HOLD time is especially useful since it lets you set the ATTACK and RELEASE to faster times. Generally, you can set faster ATTACK and RELEASE times on sounds with fast attacks, such as drums. On sounds with slow attacks, such as strings and synthesizer pads, slow ATTACK and RELEASE times will sound much smoother. You can also change the characteristic of a sound such as using a slow attack and quick release to change an electric bass into a synthesizer bass.

Keep in mind that all the controls including TRIGGER are somewhat interactive, so experimentation is the best way to get the sound you're looking for. Remember to use your ears, because if it sounds good to you, it more than likely sounds good.

# Operating The S gate 4

## USING THE FILTERS

The S gate 4 employs a DFT (Dual Filter Trigger) circuit which allows you to create an equalization contour on the trigger filter. The DTF is a two-stage, band-pass equalizer on the trigger or side-chain input. The filters are applied to the trigger whether it is derived from the audio input, or by the KEY input. By using the DTF, you can dial in and out the exact frequency range that you want to influence the opening and closing of the gate. This is especially useful when gating drums, since you often have a lot of microphone bleed due to close placement and the high SPL of the wood hitting the skin. By using the DFT, you can contour the trigger on each of S gate 4's channels to open the gate when it detects the frequency set on the High and Low Filter controls. Follow the steps below to use the DFT to set the gate to turn a music track into a bass drum only track.

- Connect the first two channels of the S gate 4 to the main left and right insert points of your mixer. For a detailed wiring guide see page 16 of this manual.
- Set both channel's controls to the default positions as described in the section "Setting Up the S gate 4".
- Press channel one and two's IN/OUT switches to the IN position and engage the LINK switch.
- Play some music from a sound source (such as a CD player) into two channels of your mixer. For this experiment you should use a recording with a contemporary, up-front drum track.
- Set the High filter control to the 9:00 position which is 250 Hz.

You should immediately hear the bass drum breaking through the gate. By engaging the filter you have just created an EQ curve with a band pass of 30Hz to 250Hz on the gate's trigger detector. The result is only the low energy from the kick drum will cause the gate to trigger open. You can use the TRIGGER, ATTACK, HOLD and RELEASE to fine-tune and dial in just the sound of the kick drum.

**Note:** You can hear the effect of the DFT circuit on the trigger or side-chain input by pressing the KEY LISTEN switch. When engaged, the KEY LISTEN circuit routes the trigger signal to the audio output allowing you to hear what effect the filters have on the side-chain.

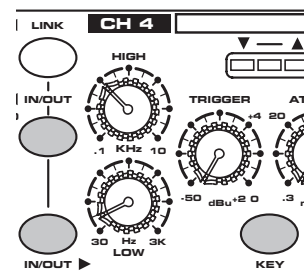
The example below shows a typical set up for using DFT while gating drum microphones.

Kick Drum with the filter set on 30Hz and 200Hz.

Snare Drum with the filter set on 1KHz and 2KHz.

Rack Tom with the filter set on 250Hz and 800Hz.

Floor Tom with the filter set on 80Hz and 500Hz.



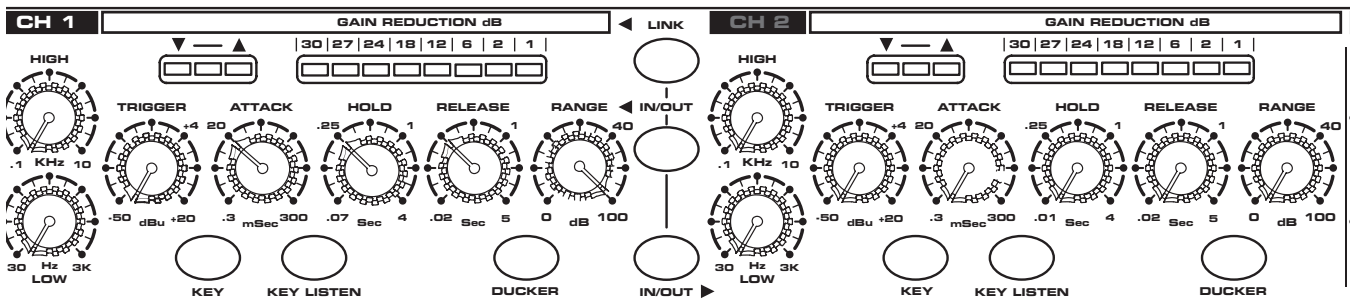
# Operating The S gate 4

## USING THE DUCKER

S gate 4's Ducker feature is a powerful tool for automatically mixing different sound sources. You can use the S gate 4's Ducker when you want one signal to control the level of another channel or channels. One of the most popular examples of using a ducker is when you have a voice-over turn down a music program track. Another example is to have a vocal track turn down a solo track. This is a great way to mix a sax or guitar solo around a vocal improvisation.

You can experiment with the ducker by using a vocal track or microphone and stereo sound source, such as a CD player. Below is a step by step example on ducking music with a vocal.

- Connect the first two channels of the S gate 4 to the main left and right insert points of your mixer. For a detailed wiring guide see page 16 of this manual.
- Now take an output from your mic or vocal channel, either from a direct, auxiliary or bus output and connect to the channel one KEY input on the S gate 4's rear panel.
- Set both channel's controls to the default positions as described in the section "Setting Up the S gate 4".
- Set the RANGE control on both channels to 40.



- Press the DUCKER and KEY switches to the IN position.
- Press the channel one and two IN/OUT switch to the IN position and engage the LINK switch.
- Play some music from a sound source (such as a CD player) into two channels of your mixer.

Now when the vocal track or mic is playing, you'll hear the music track drop by 40 dB. You can experiment with different RANGE settings until you find the balance you like.

---

# Dynamics Processing 101

To begin to understand dynamics processing, we must first understand what dynamics are. Dynamics, or the dynamic range of a signal or audio device, is the amount of level between the softest and loudest possible output. Dynamics processing is applied to a signal to manage the changes in level. Various types of processing units are available to control dynamics including Noise Gates, Expanders, Compressors, Limiters and De-Essers. All of these processes have a unique effect on a signal, but one common element they share is that in one way or another they control gain. Some dynamics processors control gain in a subtle way by slightly reducing how soft and loud a signal is, while others make drastic changes in gain like reducing the signal until it's off. Applications for dynamics processing can be categorized by two distinct groups; first, to treat a signal that has an unpredictable dynamic range and make it predictable, and second, to create a "sound" by squeezing out the dynamic range. Whether used for a live sound application, recording, mixing or mastering, dynamic processors like the S gate 4 are valuable tools for controlling gain. The following is a basic overview of dynamics processing and how it is used to improve the quality of recorded and live sound.

## COMPRESSOR

A good compressor is one of the most useful tools in live sound and recording. Compressors are used to control the dynamic range of a signal, which offers a variety of benefits including leveling a signal that's being recorded, having an instrument sit in the mix, and increasing the loudness of a sound system to name a few. Drastic amounts of compression will also result in an effect that becomes more of a sound, than just controlling gain. To understand how a compressor works, it is necessary to become familiar with the basic parameters which include threshold, ratio, attack time, and release time.

### Threshold

Threshold is the level that once the signal exceeds, gain reduction is applied. The normal range of adjustment for the threshold level is  $-40$  to  $+20$  dBu. If the threshold level is set above the highest level of the signal being sent to the compressors, the gain reduction is never triggered. Therefore, the compressor is virtually by-passed. If the threshold level is set very low so that any signal will trigger gain reduction, the compressor is working as an automatic leveler.

### Ratio

The ratio control is used to set the proportion of gain reduction in relationship to the input signal. For example if the ratio is set to 2:1 and the signal crosses above the threshold level, an increase in level of 2 dB will produce a 1 dB increase in level at the output. A ratio setting of  $\infty$  to 1 means that an infinite amount of input signal is needed to raise the output level by 1 dB. This means that the output level stays constant even when the input crosses over the threshold level.

### Attack Time

Attack time is the amount of time that a compressor takes to effect the gain reduction after the signal rises above the threshold level. A well-designed compressor has adjustable attack times ranging from  $100 \mu\text{s}$  (microseconds) to 150 ms (milliseconds). A good compressor will sound smooth as it begins to control the gain regardless of the attack time.

### Release Time

The release time is set to control how long the compressor takes to return the input signal back to its original level once the signal falls below the threshold level. The acceptable range for release time is from  $500 \mu\text{s}$  to 5 seconds. In normal use, faster release times are used for spoken word and longer release times are generally better for instrumental music.

---

# Dynamics Processing 101 - Continued

## Soft-Knee / Hard-Knee

In order to prevent harsh, unnatural envelopes on compressed signals, sophisticated dynamics processors like the S gate 4 feature an SKD (Smart Knee Detector) or automatic knee circuit. The Smart Knee Detector automatically switches from Soft-Knee when the signal is less than 10 dB over Threshold, to Hard-Knee when the signal is 10db above Threshold. In Soft-Knee mode, there is a gradual effect on gain change, which begins as the signal approaches the Threshold level. In Hard-Knee mode, gain reduction is linear based on the Threshold and Ratio controls. Any signal that falls below the Threshold level will be unprocessed.

## Noise Gates

Noise gates are used to remove unwanted noise and/or bleed from recorded tracks in the studio or from open microphones in live sound systems. Noise gates can also be used as a sound effect, most commonly to chop the end of a reverb, let's say on a snare drum, so that the entire snare sound ends just before the beat. The basic principle of a noise gate is to work as an automatic mute switch. Mute off (Gate Open) when the desired signal is present and mute on (Gate Closed) when the desired signal is not present. In order to get the gate to work predictably, it is necessary to set a threshold, or trigger level that will determine when the gate will open. If the signal is below the trigger, the gate will remain closed. When the signal is above the trigger, the gate will trigger open allowing the desired signal to pass and be heard. Noise gates often have other adjustable controls like attack, hold, range and release. Many noise gates like the S gate 4 use sophisticated circuits to control some of these parameters automatically.

## Downward Expander

The purpose of a well-designed Downward Expander is to increase the perceived dynamic range of a system. This is accomplished by decreasing the gain during the softer sections, thereby lowering the relative noise floor. When the signal level is below the desired trigger level, the expander lowers the overall gain by the selected amount.

## Limiter

A Limiter is a specific form of a compressor configured to prevent peaks and for general overload protection. It is often characterized by a high ratio setting (10 or above), as well as a relatively high threshold level.

## Stereo Link Mode

The S gate 4 can be configured from dual-mono operation to stereo by using the Stereo Link switch. In Stereo Link mode, Channel 2 functions are controlled by the settings of Channel 1 with the exception of IN/OUT, KEY and LIMITER. The same holds true for Channels 3 and 4.

---

# Applications

## Using the Expander/Gate to Remove Hiss and Noise

The S gate 4 is an extremely useful tool in reducing the level of unwanted noises. By using the Expander/Gate you can effectively fade the noise into the noise floor or abruptly turn the unwanted signal completely off.

Let's say you want to reduce the bleed or cross talk that occurs when different instruments are recorded in close proximity to each other. You have recorded an acoustic guitar simultaneously in the same room as with some other acoustic instruments. The problem is that you hear a lot of the other instruments playing when the acoustic guitar is silent. This can cause phasing and comb filtering problems due to microphone placement, so having the bleeding signal drop into the noise floor is desirable. To do this, set the S gate 4 to Expander mode with the Release switch to Slow and adjust the Trigger so that the acoustic guitar signal is well above the threshold level. When the signal from the acoustic guitar track falls below the threshold level, the signal subtly fades into the noise floor.

Now let's say you're attempting to remove the pick-up noise and hum from a guitar track that was recorded through a loud amplifier. The hum and noise is most noticeable in-between the rhythm of the performance, so you want to have the gate close during the silent parts and open during the musical passages. To do this, set the S gate 4 to Gate mode and adjust the Trigger level so that the gate is open just during the musical guitar parts, and so that the gate is closed during the silent passages so that the hum and noise is muted.

## Gating Drums

Using noise gates on drums is particularly useful in recording and in live sound. When a drum kit is set up with individual microphones on each drum in a live PA system, there's potential for great sound. However, there are several gain management problems that can occur. Several microphones, like the ones on the tom-toms, will only be used occasionally and until the time that the tom-tom is actually played, its microphone is merely picking up unwanted sound from other instruments on stage. This adds a lot of unwanted mush in the mix and also adds to feedback problems. Set the controls so that the gate opens only when the tom-tom is played. This same technique is useful on drums that have been recorded on individual tracks. By using the Gate to mute the bleed of the other drums, you can effectively reduce the comb filtering produced by phase cancellation due to microphone proximity.

## Gating Longer Sounds

When using a noise-gate on sounds with a longer decay such as a piano, it is usually necessary to use a longer release time. Run the piano signal through the S gate 4 and set the Expander/Gate Release switch to Slow. Adjust the Trigger level on sustained passages to get the best results. Be sure to listen for the natural decay of the instrument and allow the gate to remain open until just after the end of the decay.

Using a Noise Gate to Tighten Up the Mix

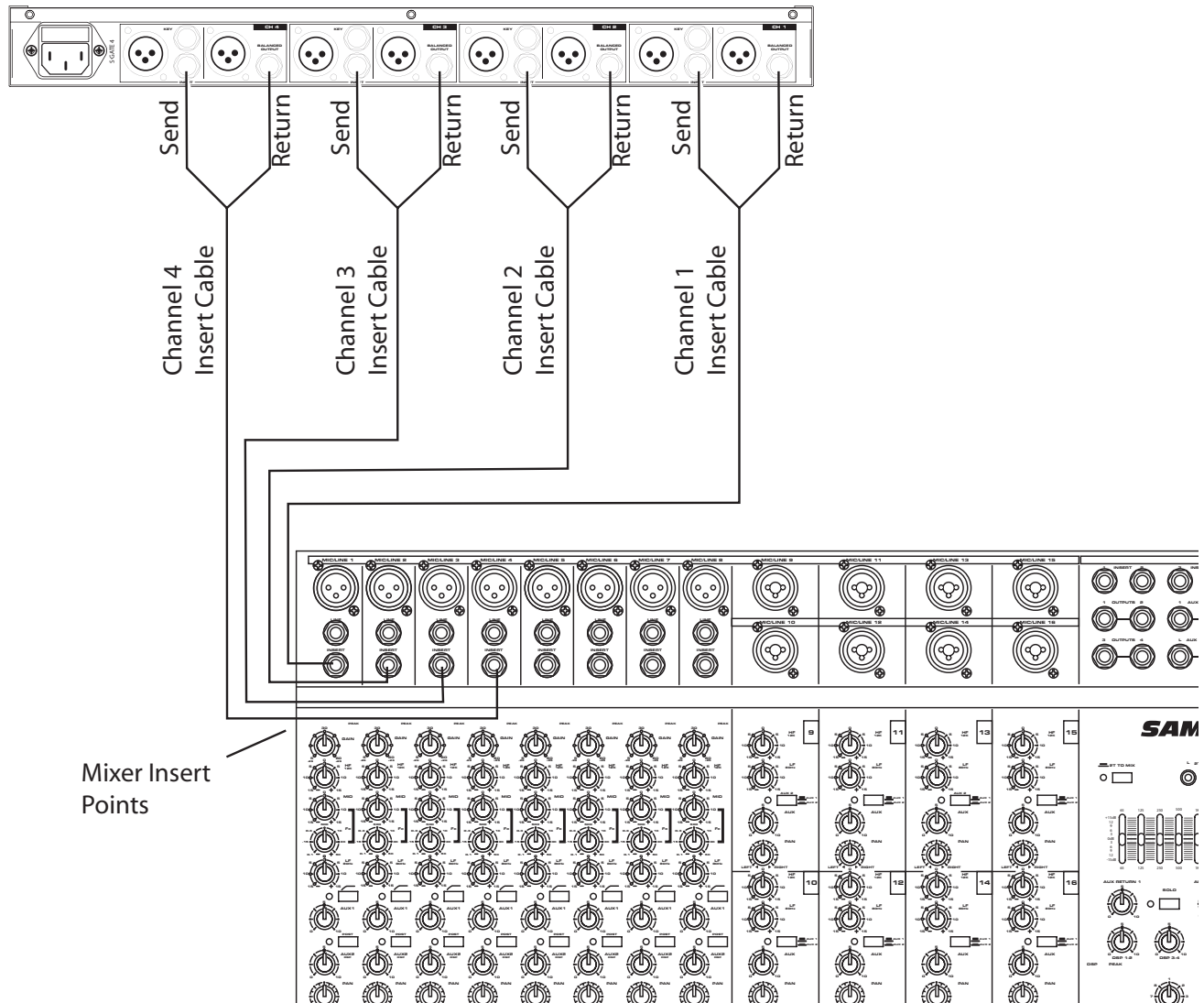
## Using a Noise Gate to Tighten Up the Mix

S gate 4 can be used in mixing to clean up loosely played tracks, and even make a rhythm section sound tighter than they really are. On a single instrument, like a rhythm guitar track, you can clean up the performance by gating the track. To do this, set a release time to exactly match the tempo of the music, so that you hear the guitar playing, but stopping (gate closed) just before the beat. By doing this, a less than perfect rhythm track can quickly sound like it was played by a great session guitarist. Also, pay attention to the space that the S gate 4 creates in the track, since very often a great performance really jumps out when it is framed by the space, or silence around the track.

To tighten up a group of instruments, patch in an S gate 4 channel on each instrument and dial in a good gate setting on each. Now select the best performance from the group that you want to use as a master to control the other instruments. Take the KEY OUTPUT from that channel and patch it into each the other channel's KEY INPUT. The result is that the audio (performance and rhythm) from the master channel will key other channel's gates to open and close so that the performance of all channels sounds exactly the same.

# S gate 4 System Set-Ups

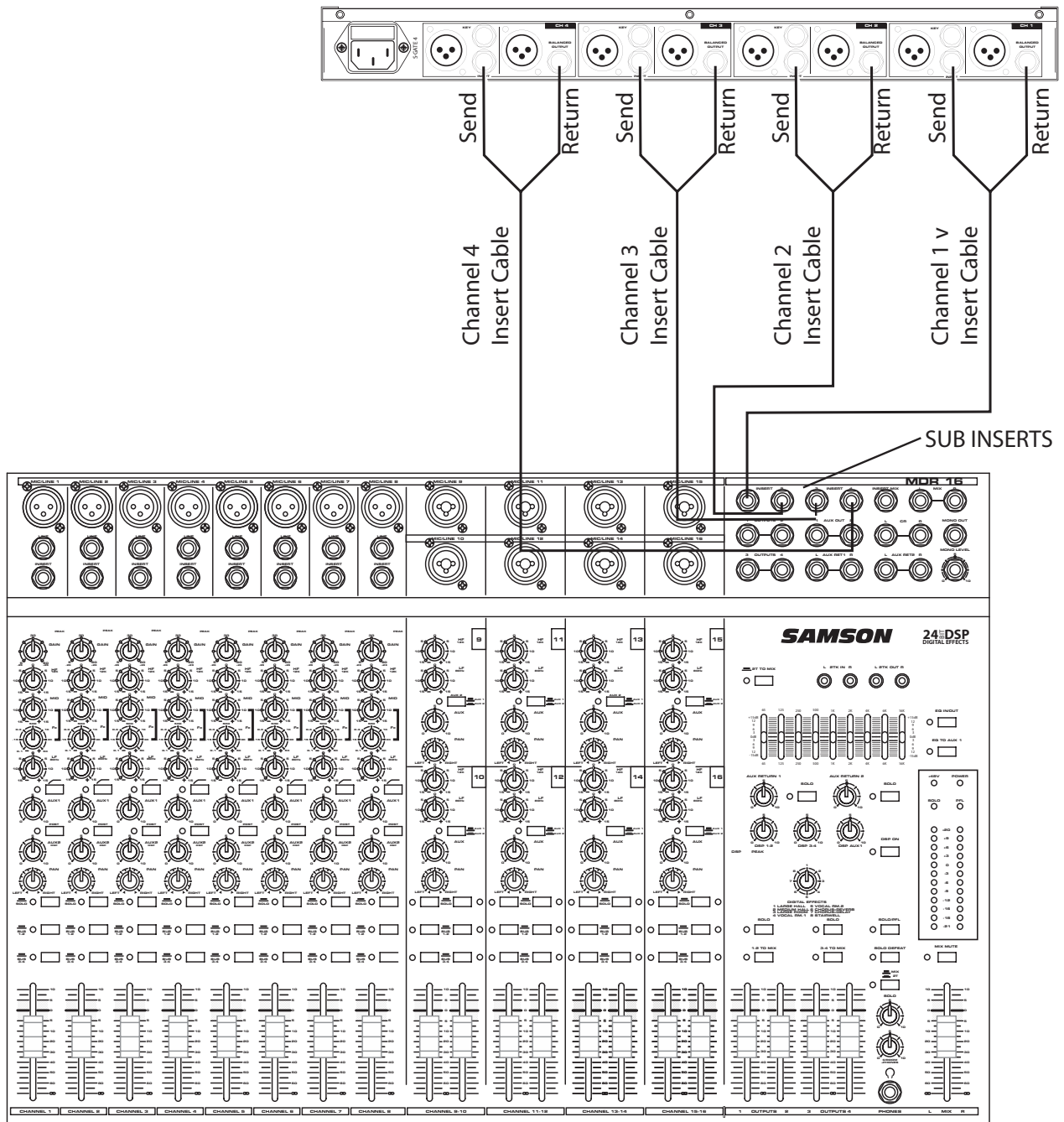
## LIVE SOUND SYSTEM WITH GATES ON INDIVIDUAL CHANNELS



*In this example, the S gate 4 is inserted on the mixer's first four input channels.*

# S gate 4 System Set-Ups

## LIVE SOUND SYSTEM WITH GATES ON SUB INSERT POINTS



*In this example, the S gate 4 channels are connected to the mixer's bus 1-4 inserts points.*



# S gate 4 Connections

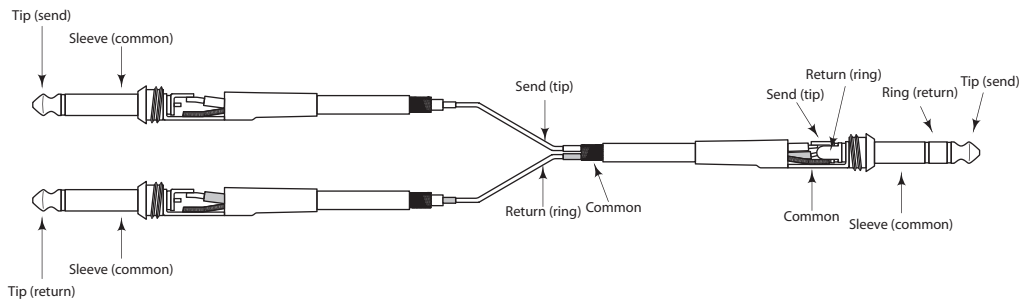
## CONNECTING THE S gate 4

There are several ways to interface the S gate 4 to support a variety of applications. The S gate 4 features servo-balanced inputs and outputs, so connecting balanced and unbalanced signals is possible without any signal loss. The S gate 4 can be used on a single instrument by connecting to a mixer channel's insert points, or on an entire mix "in-line" between a mixer's outputs and a power amp or equalizer.

### INSERT POINTS

Many mixers today provide channel and bus or group inserts. Insert points are input and output patch points that interrupt the channel or bus signal so that external processors can be connected. Channel insert points are ideal for connecting to when using the S gate 4 to gate a single channel like a vocal, bass or guitar. Bus insert points are ideal for gating groups of instruments like vocals, strings or drums. If you are connecting to a channel's insert points, you may have a single TRS jack for Send & Return. In this case, use an Insert "Y" Cable that is configured like the one in the wiring diagram below.

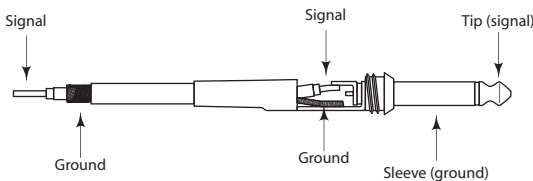
**Insert Cable, 1/4" male TRS connector to two male 1/4" in send and return configuration.**



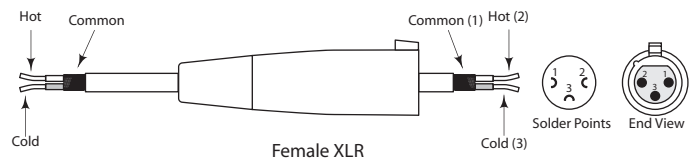
### IN-LINE

In live sound operation, the S gate 4 can be installed in-line between a mixer and equalizer or power amplifier. For these applications the S gate 4 provides both 1/4" TRS connectors and XLR connectors to easily interface with most any professional audio device. Follow the wiring examples below for your particular installation.

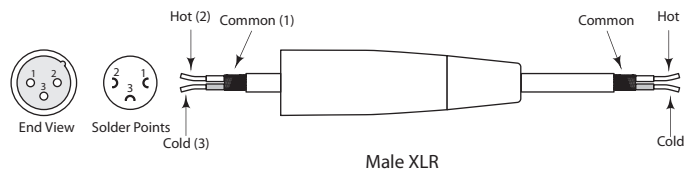
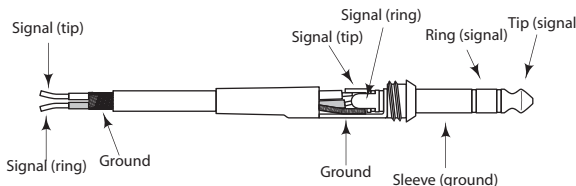
### Unbalanced 1/4" Connector



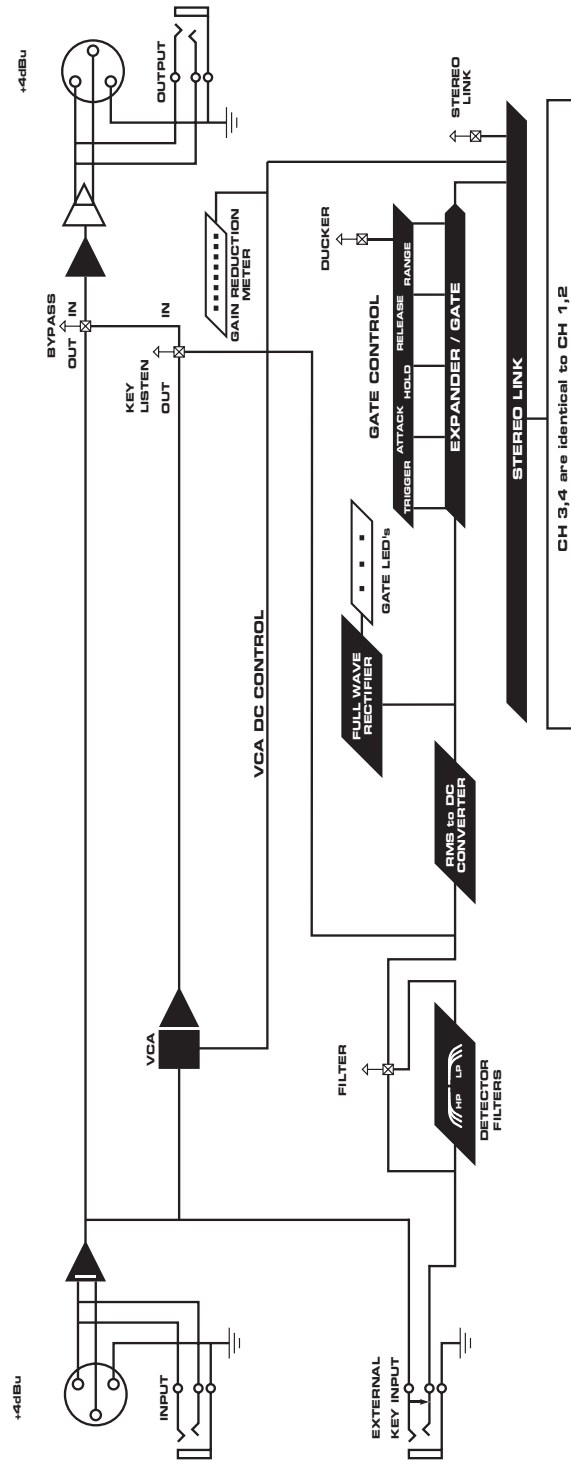
### XLR Balanced Wiring Guide



### Balanced TRS 1/4" Connector



# Block Diagram



**C O N N E C T I O N S**

<b>1 / O XLR</b>			
PIN 1	PIN 2	PIN 3	
GND	HOT	COLD	
<b>1 / O 1/4"</b>			
TIP	RING	SLEEVE	
HOT	COLD	GND	
<b>1/4" KEY</b>			
TIP	RING	SLEEVE	
RETURN	SEND	GND	

# S.gate 4

4 CHANNEL GATE/DUCKER

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# Specifications

## System Specifications

Frequency Response	20Hz to 20kHz +/- 0.5 dB
Dynamic range	95 dBu, un-weighted, 22 Hz to 22 kHz
THD	0.008 % typ. @ +4 dBu, 1 kHz
Crosstalk	90dB, 22 Hz to 22 kHz
Detector	RMS

## Gate

Trigger range	variable (-50 to +20 dB)
Attack	variable (0.3 to 3000ms)
Release	variable (0.02 to 5 sec.)
Hold	variable (0.01 to 4 sec.)
Range	variable (0 to 100 dB)

## DUCKER Section

RANGE	variable (1 to 100 dB )
-------	-------------------------

## Function Switches

Link	Linking two channels for stereo operation. Channel 1 becomes master for Channel 2. Channel 3 becomes master for Channel 4.
------	--

Filter  
Key Listen  
Ducker  
In/Out

## Meters & LED's

Gain Reduction	8 segment LED display: 30/24/18/12/6/4/2/1 dB
Gate Activity	3 segment LED display: green-open; yellow-hold; red-closed

---

# Specifications

## Audio Input

Connectors	XLR and 1/4" TRS jack
Impedance	20k Ohm balanced, 10k Ohm unbalanced
Nominal Operating Level	
Max. Input Level	+21 dBu, balanced and unbalanced
CMRR	Typ. 40dB, >55dB @ 1kHz

## Audio Output

Connectors	XLR and 1/4" jack
Impedance	60 Ohms balanced, 30 Ohms unbalanced
Max. Output Level	+21 dBu, balanced and unbalanced

## Power Supply

Mains Voltages/selectable	USA/Canada ~120 V AC, 60 Hz
	U.K./Australia ~240 V AC, 50 Hz
	Europe ~230 V AC, 50 Hz

Fuse	100-120 V AC; 250 mA (slow-blow) 200-240 V AC: 125 mA (slow-blow)
Power Consumption	5 Watts
Power inlet	Standard IEC receptacle/with fuse

## Size

Dimensions	1 3/4" (44.5 mm)H x 19" (482.6 mm) x 7 3/4" (196.9 mm)
------------	--

## Weight

Net Weight	5.25 lbs.(2.4 kg)
Shipping Weight	7.5 lbs.(3.4 kgs)



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