

# One Fader Series

Reference Manual for Models:

## **Fader 1**

Operation section starts on page 7

## **Fader 2**

Operation section starts on page 13

## **Fader 3**

Operation section starts on page 19





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# Introduction

Thank you for purchasing our One Fader Desktop Analog Slide Fader. The **One Fader** has operational features that are easy to understand and you should be up and running in no time. If you are unfamiliar with audio equipment or audio signal flow, it is recommended that you read this manual. If you have any questions regarding this or any Speck product, do not hesitate to contact Speck Electronics.

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**Model Fader 1**  
Mono Fader

**Model Fader 2**  
Stereo Fader

**Model Fader 3**  
Stereo Fader + Monitor  
Section

## General Description

The **One Fader** is a series of three desktop analog slide faders: The **Fader 1** - mono slide fader, the **Fader 2** - stereo slide fader, and the **Fader 3** - stereo slide fader with a monitor section.

The One Fader has a transparent neutral signal path and high headroom that will handle balanced signals up to +28dBu. No VCA's, no CMOS switching, and no A/D - D/A converters... just 100% analog signal path. All audio inputs and outputs are fully balanced and available on XLR and TRS connectors so you can connect the One Fader to virtually any line level device. For product compatibility, all models have accessible jumpers that can provide an extra 6dB or 10dB of gain.

Each fader channel has the necessary input and output electronics to allow the One Fader to interface to any balanced, unbalanced, transformer, or transformer-less line level signal. Most importantly, no additional mixer or audio interface is required. With its clean, uncluttered layout, the One Fader can be placed in a convenient desktop location.

## The One Fader Series is available in three models:

### **Fader 1 - Mono Fader** *(See page 7 for the operation section)*

Add the Fader 1 (Mono Fader) to your 500 module channel strip, to your hybrid recording signal path, or for "Riding the Fader" while recording.

### **Fader 2 - Stereo Fader** *(See page 13 for the operation section)*

Connect the Fader 2 (Stereo Fader) to the outputs of your DAW or any audio system that does not have a stereo slider fader. Patch the Fader 2 to the stereo inserts of many popular rack mount "faderless" line mixers.

### **Fader 3 - Stereo Fader plus Monitor outputs** *(See page 19 for the operation section)*

With studio monitor and headphone controls, use the Fader 3 as a mini monitor controller. Except this mini controller has a 100mm stereo slide fader.

## Standard Accessories

- **PS4-F Power Module**

PS4-F-NA for 100 and 120VAC Mains

-or-

PS4-F-EU for 220, 230, and 240VAC Mains.

- **Operations Manual**

# Installation

## General

The following information should give you the basics on how to install the **One Fader** and power module. The proper installation requires a clear understanding of audio wiring, grounding, and shielding techniques.

## Unpacking & Inspection

The **One Fader** is delivered in a special protective container and has been carefully inspected both mechanically and electrically before shipment. All items should be physically free of marks and scratches and in perfect electrical order upon receipt. To confirm this, your product and power module should be inspected for physical damage that may have occurred in transit. Any damage should be reported to your dealer or delivery company as soon as possible.

If the product is to be shipped to Speck Electronics for service or repair, contact Speck Electronics for a Return Merchandise Authorization (RMA). Include the model number and serial number of the product. Place the product in the original container if available. If the original container is not used, wrap the product in heavy plastic before placing in a suitable container. Use plenty of packing material around all sides of the product and protect panel surfaces with cardboard strips. Mark shipping container with “Delicate Instrument” or “Fragile,” and insure the shipment for the proper value.

## Cleaning

To clean the top panel, wipe the surface gently using a soft lint-free cloth to avoid scratching the panel or markings. Paper towels are not recommended. Commercially available window cleaner solutions may be used; however, the solution should be applied to the cloth and not the panel to avoid the seepage of liquid to the inside of the enclosure.

Do not use brushes or feather dusters to remove dust. This may cause dust to fall into the openings around the slide fader and pushbutton switch.

## Mechanical Installation

The **One Fader** was designed to be placed on a desktop. The mounting location should be such that the operator has a clear, unobstructed view of the top panel from his/her normal operating position.

## Power Module Installation

The **One Fader** is shipped with an external 16 VAC power module. The power module has a 6' (1.8M) cable and is fitted with a special 4 pin connector for mating to the "Power Input" on the rear panel. All AC rectification, filtering, and DC regulation is performed within the chassis of the One Fader.

The PS4-F power module is available in two versions: a North American version and European version. The North American version (PS4-F-NA) is designed to operate with 100 or 120 VAC power and the European version (PS4-F-EU) is designed to operate with 220, 230, or 240 VAC power.

**Use only the PS4-F external power module that is supplied with your One Fader. Using any other power module or power source will most definitely damage your product.**



**PS4-F-NA**



**PS4-F-EU**

To connect the power module to the **One Fader**, fit the 4 pin rectangular connector to the chassis mount receptacle at the rear. The respective connectors are keyed so the plug and the receptacle can fit in only one direction. Before connecting the 4 pin rectangular plug to the One Fader, make certain the power module is not connected to an AC receptacle.

The PS4-F power module has an internal "one shot" thermal fuse. Fuse replacement is not possible with this module. If it has been determined that the power module has failed, contact Speck Electronics for a factory replacement at +760-723-4281.

**The power module is a "Class 2 transformer" device and can only be used indoors. Your product and power module should never be exposed to rain or moisture.**

## Power Module Mounting location

One of the primary reasons that the PS4-F power module is external is to insure that it maintains a safe distance from the active electronics of the One Fader. It is recommended that the power module be located at a reasonable distance from the One Fader and audio cables. For that matter, any device that has a strong magnetic power field should be kept at a reasonable distance from the One Fader and audio cables.

## Physical Placement of Adjacent Equipment

Any device that emits a high EMI (Electro Magnetic Interference) or RFI (Radio Frequency Interference) energy field should be treated with suspicion. EMI is considered any unwanted signal which adversely affects the operation of the **One Fader** or your recording/mixing system.

Electronic equipment such as power amplifiers, power supplies (especially wall mount type), video monitors, computers, certain synths and samplers must be located away from the **One Fader** and its associated cables. It may be necessary to alter the positions of certain equipment that you feel would cause buzzes or hums in your system.

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# Operation - Fader 1



## Overview

In this section we will give you basic information on the operation of the **Fader 1 (F.1.)** and adequately describe its controls and connectors.

The information in this section of the manual is intended to help with the technical process when using your **F.1.** Words alone cannot adequately describe how to adjust the slide fader for every situation you might encounter. You should experiment with fader levels to achieve the best results for any particular situation. Your ears should be your best gauge of how to adjust the fader on the **F.1.** to make the sound fit your requirements.

## Hooking up the Fader 1

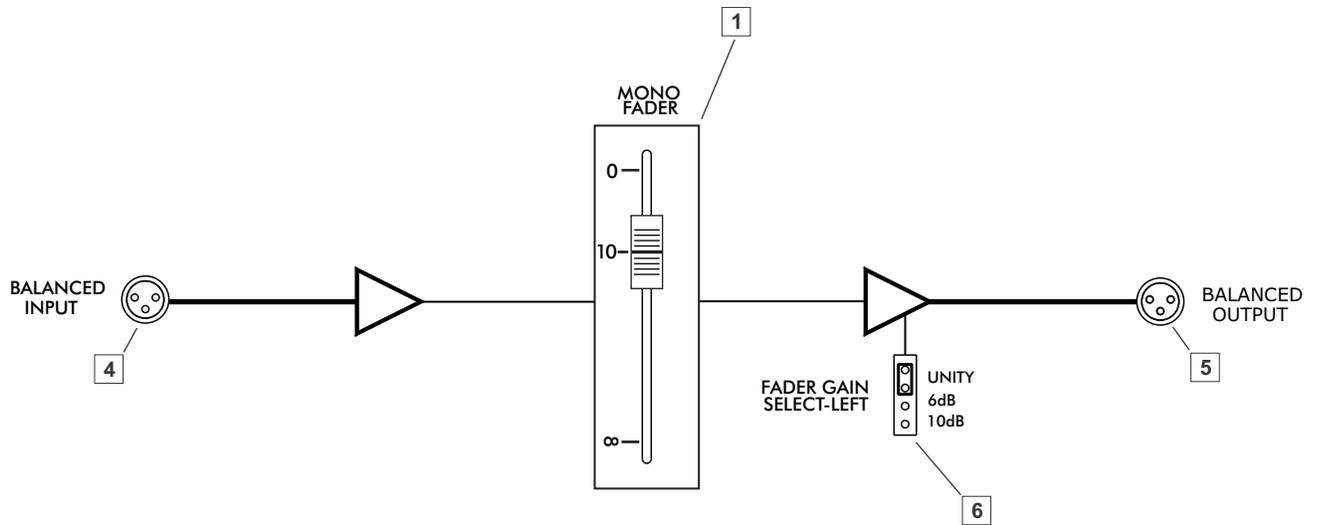
Due to the high performance of the **F.1.** it is recommended that you use only the highest quality audio cable. A high quality cable, by definition, is a cable that provides good mechanical strength, high microphonic noise immunity, high frequency response, low crosstalk, and 100% shielding ability. All audio cable used should be a 3-conductor foil shield type (2 inner conductors and a shield drain conductor). It is not recommended that the 2 conductor “off the shelf cables” be used.

All wire and cable interfaced to the **F.1.** should be terminated with high quality connectors. An XLR connector should make a positive connection to its respective mating jack and provide adequate strain relief to its cable. All connectors should also have a metal shell to provide 100% shield for exposed conductors.

We do believe that “you get what you pay for” and advise not to purchase lower quality cables. We recommend that you purchase from a reputable cable manufacturer that uses brand name materials. Brand name cables include (in no particular order): Mogami, Canare, Belden, Gepco, Redco, and ProCo. Connector brands include Switchcraft and Neutrik.

### Signal Flow Diagram for the Fader 1

Use the channel signal flow diagram shown below as a reference when reading the descriptions of the controls and connectors [1] through [6] in this chapter.



## Fader 1 Top Panel

### 1. Mono Fader

This mono 100mm slide fader adjusts the level of the **F.1.** channel and has a range of  $\infty$ dB to 10dB. The operation of the slide fader adjusts the level to the XLR line output.

The “0” mark is the “unity gain” setting for the fader channel.

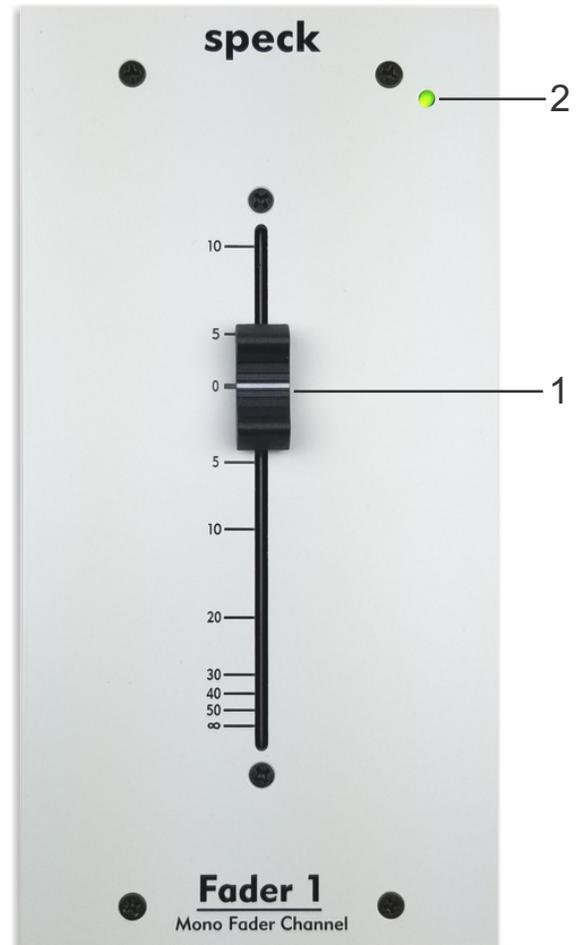
#### Fader Input to Fader Output Gain

With a balanced +4dBu signal present at the XLR line input, the fader set to the “0” mark, and the Gain Select jumper in the default (0dB) position the corresponding balanced XLR line output will be +4dBu.

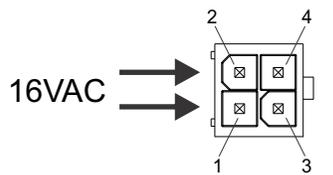
With the gain jumper in the 6db or 10dB position and the slide fader set at the “10” mark, this will give the channel a total of 16dB or 20dB of gain respectively.

### 2. Power LED

This LED will illuminate green when power is applied to the Fader 1.

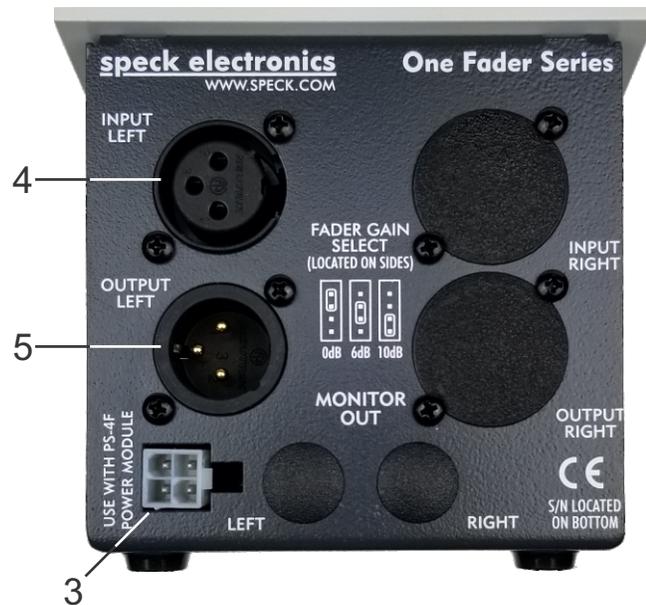


## Fader 1 Rear Panel



PIN 1	16 VAC
PIN 2	16 VAC
PIN 3	
PIN 4	

Power Inlet Pins



### 3. Power Inlet

The cable from the PS4-F power module connects to this 4 pin square connector. This connector and its respective plug are keyed so they will only fit in one direction. For power module installation instructions, refer to the Installation Section on page 4 of this manual.

As shown in the connector illustration “Power Inlet Pins” the 16VAC from the external power module is connected between pin 1 and pin 2.

### 4. XLR Line input

There is one XLR connector for the fader line input. This balanced input will accept a +4dBu reference signal. The XLR active-balanced input is suitable for any high level line source.

### 5. XLR Line output

There is one XLR connector for the fader line output. With a balanced +4dBu signal present at the line input and the slide fader set to the “0” mark, the balanced XLR line output will be +4dBu.

The pin configuration for all XLR connectors is:  
**Pin 1=Ground, Pin 2=High (+), Pin 3=Low (-)**

**NOTE - All active-balanced output circuits of the Fader 1 were designed for balanced lines and should only be connected to balanced inputs. If that is not possible and it is necessary to connect to an unbalanced input, care must be taken not to connect the low (-) terminal to ground. If the low (-) terminal of these outputs is connected to ground, the result may be a high level of audio distortion.**

## 6. Gain Select

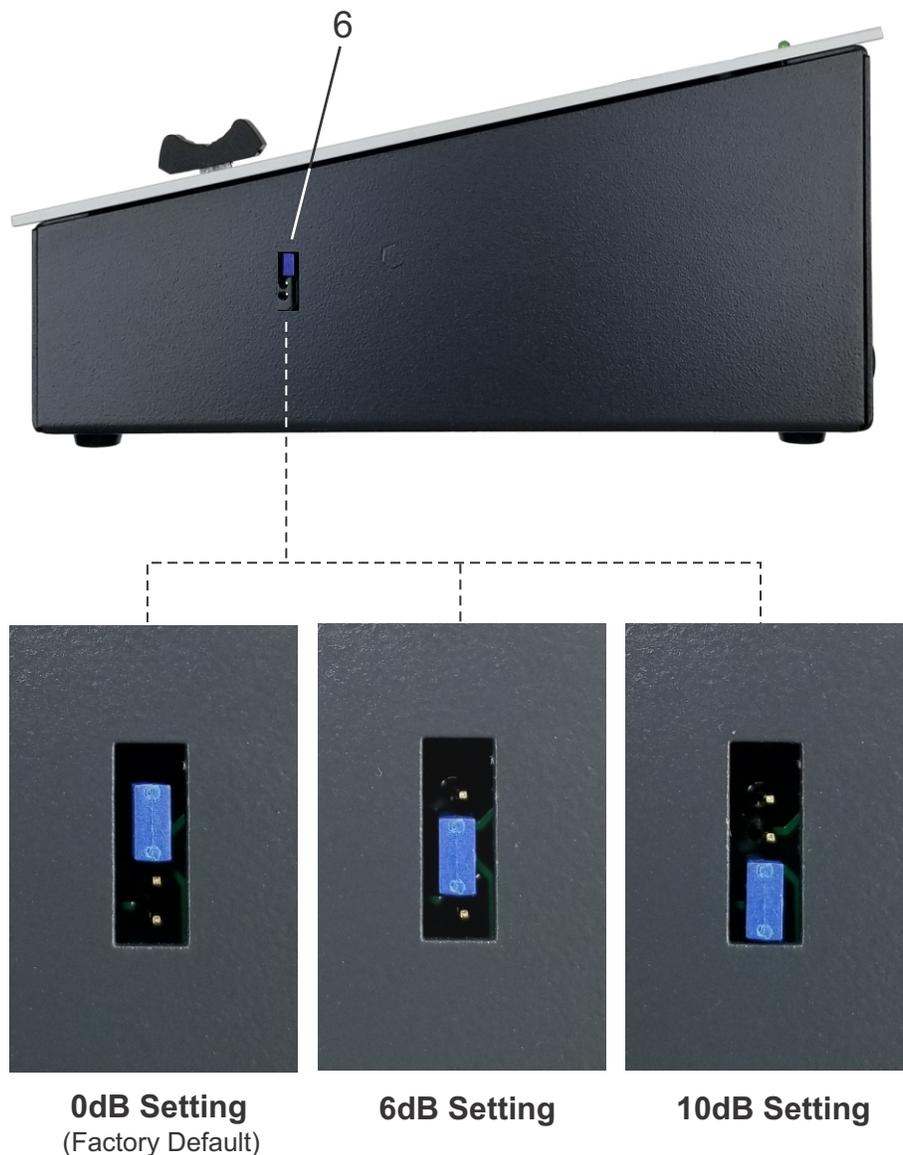
The **Fader 1** has three gain settings available: 0dB, 6dB, and 10dB. The factory default setting is for 0dB of gain. The gain select jumper is located on the right side of the chassis as shown below.

### Fader Input to Fader Output Gain

With a balanced +4dBu signal present at the XLR line input, the fader set to the “0” mark, and the Gain Select jumper in the default (0dB) position the corresponding balanced XLR line output will be +4dBu.

With the gain jumper in the 6db or 10dB position and the slide fader set at the “10” mark this will give the channel a total of 16dB or 20dB of gain respectively.

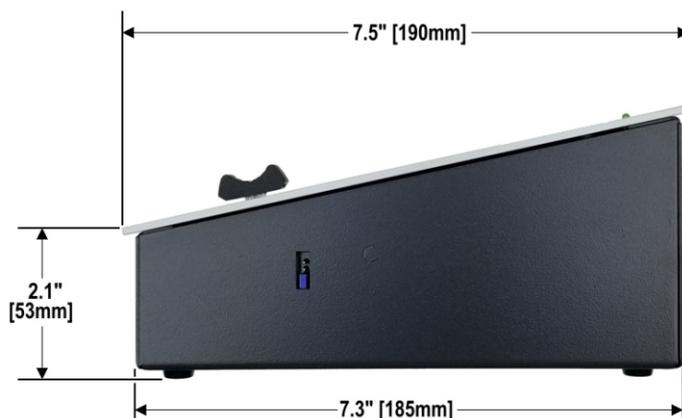
**Note:** Extra gain may be important when interfacing to unbalanced gear or when the source signal level is extremely low.



## Specifications

<b>Line input impedance</b> Balanced Unbalanced	30K ohms 15K ohms
<b>Maximum input level</b>	+28dBu
<b>Output Impedance</b>	60 ohms
<b>Maximum output level (2k load)</b>	+28dBu (Balanced) +22dBu (Unbalanced)
<b>Frequency Response (10 dB gain)</b>	1Hz-94kHz (+0/- .5dB)
<b>THD+n</b> +4dBu at line input, fader set to "10" mark, +14dBu at line output.	.00075%
<b>Noise (22Hz-22kHz)</b> Fader set at "0" mark Fader set at "10" mark Fader set at "∞" mark	-96dBu -91dBu -99dBu
<b>AC Power Requirements (Power Module)</b>	100-120VAC 50/60Hz .5 amp 220-240VAC 50/60Hz .25 Amp
<b>Weight</b>	2 Lbs (.9kg)
<b>Total shipping weight</b>	3 Lbs (1.4kg)

### Dimensions



# Operation - Fader 2



## Overview

In this section we will give you basic information on the operation of the **F.2.** and adequately describe its controls and connectors.

The information in this section of the manual is intended to help with the technical process when using your **F.2.** Words alone can not adequately describe how to adjust the slide fader for every situation you might encounter. You should experiment with fader levels to achieve the best results for any particular situation. Your ears should be your best gauge of how to adjust the fader on the **F.2.** to make the sound fit your requirements.

## Hooking up the Fader 2

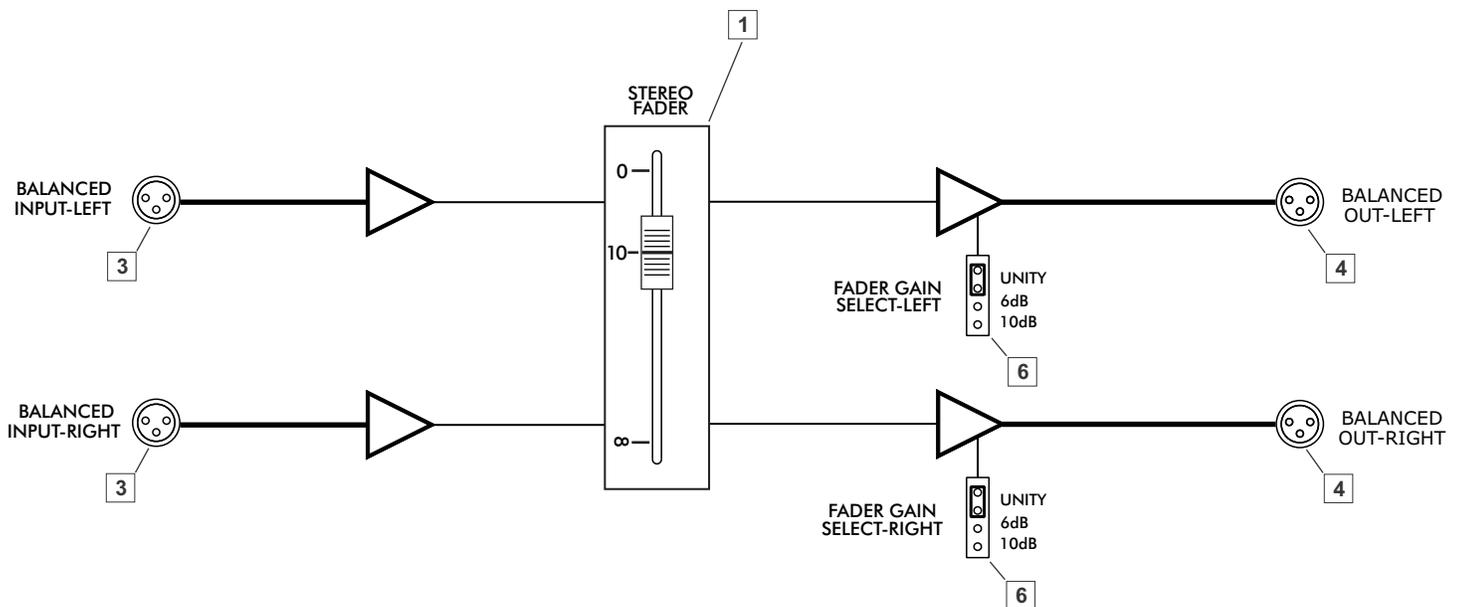
Due to the high performance of the **F.2.** it is recommended that you use only the highest quality audio cable. A high quality cable by definition is a cable that provides good mechanical strength, high microphonic noise immunity, high frequency response, low crosstalk, and 100% shielding ability. All audio cable used should be a 3 conductor foil shield type (2 inner conductors and a shield drain conductor). It is not recommended that the 2 conductor “off the shelf cables” be used.

All wire and cable interfaced to the **F.2.** should be terminated with high quality connectors. An XLR connector should make a positive connection to its respective mating jack and provide adequate strain relief to its cable. All connectors should also have a metal shell to provide 100% shield for exposed conductors.

We do believe that “you get what you pay for” and advise not to purchase lower quality cables. We recommend that you purchase from a reputable cable manufacturer that uses brand name materials. Brand name cables include (in no particular order): Mogami, Canare, Belden, Gepco, Redco, and ProCo. Connector brands include Switchcraft and Neutrik.

## Signal Flow Diagram for the Fader 2

Use the channel signal flow diagram shown below as a reference when reading the descriptions of the controls and connectors [1] through [6] in this chapter.



## Fader 2 Top Panel

### 1. Stereo Fader

This stereo 100mm slide fader adjusts the level of the left and right channels and has a range of  $\infty$ dB to 10dB. The operation of the slide fader simultaneously adjusts the level to the left and right XLR line outputs. The “0” mark is the “unity gain” setting for the fader channel.

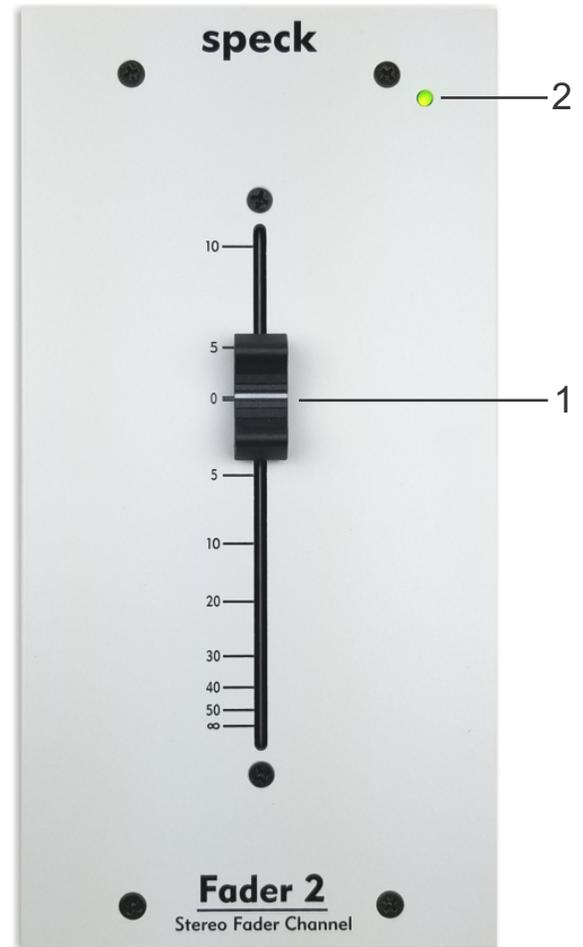
#### Fader Input to Fader Output Gain

With a balanced +4dBu signal present at the XLR line input, the fader set to the “0” mark, and the Gain Select jumper in the default (0dB) position the corresponding balanced XLR line output will be +4dBu.

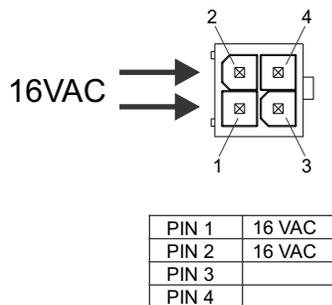
With the gain jumper in the 6db or 10dB position and the slide fader set at the “10” mark, this will give the channel a total of 16dB or 20dB of gain respectively.

### 2. Power LED

This LED will illuminate green when power is applied to the Fader 2.



## Fader 2 Rear Panel



Power Inlet Pins



### 3. Power Inlet

The cable from the PS4-F power module connects to this 4 pin square connector. This connector and its respective plug are keyed so they will only fit in one direction. For power module installation instructions, refer to the Installation Section on page 4 of this manual.

As shown in the connector illustration “Power Inlet Pins” the 16VAC from the external power module is connected between pin 1 and pin 2.

### 4. XLR Line inputs

There are two XLR connectors for the fader line inputs. These balanced inputs will accept a +4dBu reference signal.

The XLR active-balanced inputs are suitable for any high level line source.

### 5. XLR Line outputs

There are two XLR connectors for the fader line output. With a balanced +4dBu signal present at the line inputs and the slide fader set to the “0” mark, the balanced XLR line outputs will be +4dBu.

The pin configuration for all XLR connectors is:  
**Pin 1=Ground, Pin 2=High (+), Pin 3=Low (-)**

**NOTE - All active-balanced output circuits of the Fader 2 were designed for balanced lines and should only be connected to balanced inputs. If that is not possible and it is necessary to connect to an unbalanced input, care must be taken not to connect the low (-) terminal to ground. If the low (-) terminal of these outputs is connected to ground, the result may be a high level of audio distortion.**

## 6. Gain Select

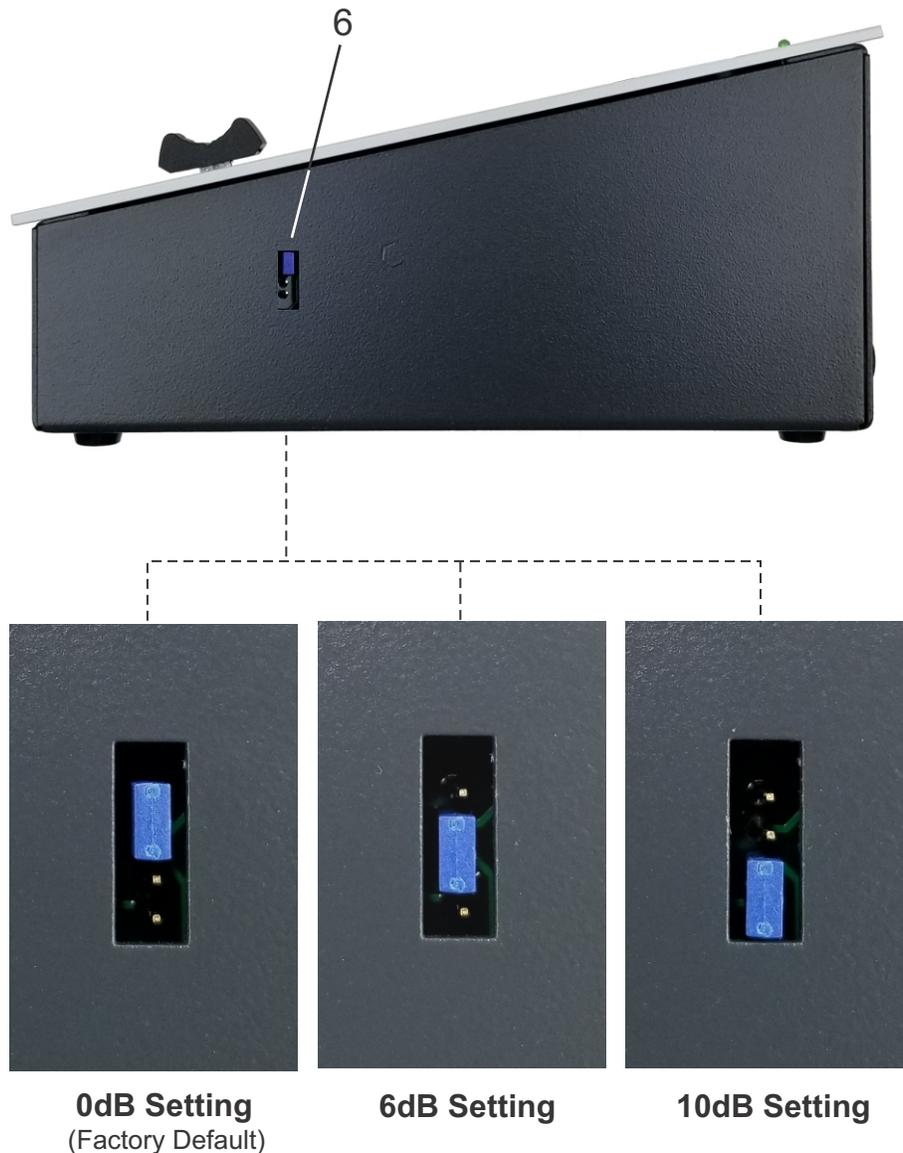
The **Fader 2** has three gain settings available: 0dB, 6dB, and 10dB. The factory default setting is for 0dB of gain. The gain select jumpers for the left and right channels are located on the respective left and right sides of the chassis as shown below.

### Fader Input to Fader Output Gain

With a balanced +4dBu signal present at the XLR line input, the fader set to the “0” mark, and the Gain Select jumper in the default (0dB) position, the corresponding balanced XLR line output will be +4dBu.

With the gain jumper in the 6db or 10dB position and the slide fader set at the “10” mark, this will give the channel a total of 16dB or 20dB of gain respectively.

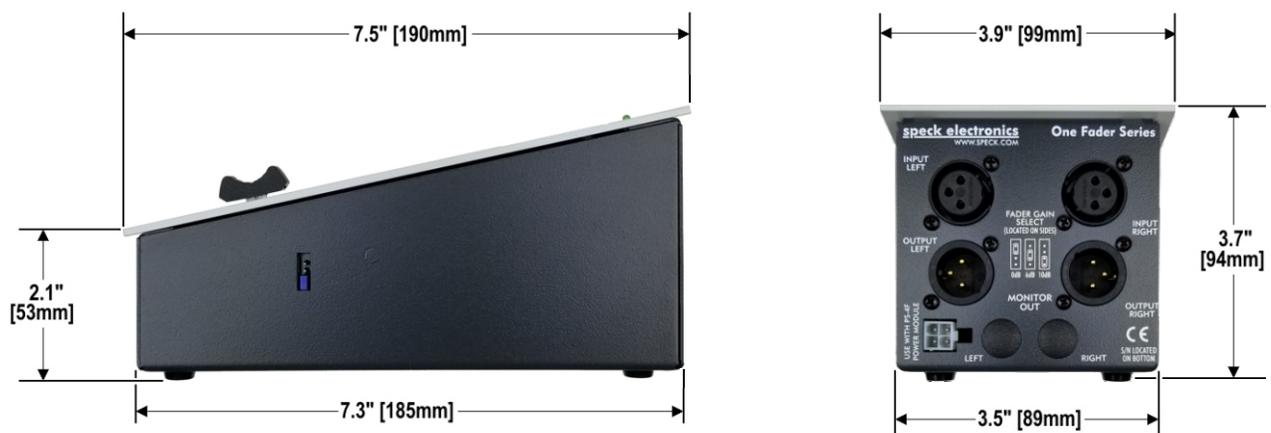
**Note:** Extra gain may be important when interfacing to unbalanced gear or when the source signal level is extremely low.



## Specifications

<b>Line input impedance</b> Balanced Unbalanced	30K ohms 15K ohms
<b>Maximum input level</b>	+28dBu
<b>Output Impedance</b>	60 ohms
<b>Maximum output level (2k load)</b>	+28dBu (Balanced) +22dBu (Unbalanced)
<b>Frequency Response (10 dB gain)</b>	1Hz-94kHz (+0/- .5dB)
<b>THD+n</b> +4dBu at line input, fader set to "10" mark, +14dBu at line output.	.00075%
<b>Crosstalk (1kHz)</b> Channel to channel	-102dBu
<b>Noise (22Hz-22kHz)</b> Fader set at "0" mark Fader set at "10" mark Fader set at "∞" mark	-96dBu -91dBu -99dBu
<b>AC Power Requirements (Power Module)</b>	100-120VAC 50/60Hz .5 amp 220-240VAC 50/60Hz .25 Amp
<b>Weight</b>	2 Lbs (.9kg)
<b>Total shipping weight</b>	3 Lbs (1.4kg)

## Dimensions



# Operation - Fader 3



## Overview

In this section we will give you basic information on the operation of the **Fader 3 (F.3.)** and adequately describe its controls and connectors.

The information in this section of the manual is intended to help with the technical process when using your **F.3.** Words alone can not adequately describe how to adjust the controls for every situation you might encounter with the **F.3.** You should experiment with fader levels to achieve the best results for any particular situation. Your ears should be your best gauge of how to adjust the fader on the **F.3.** to make the sound fit your requirements.

## Hooking up the Fader 3

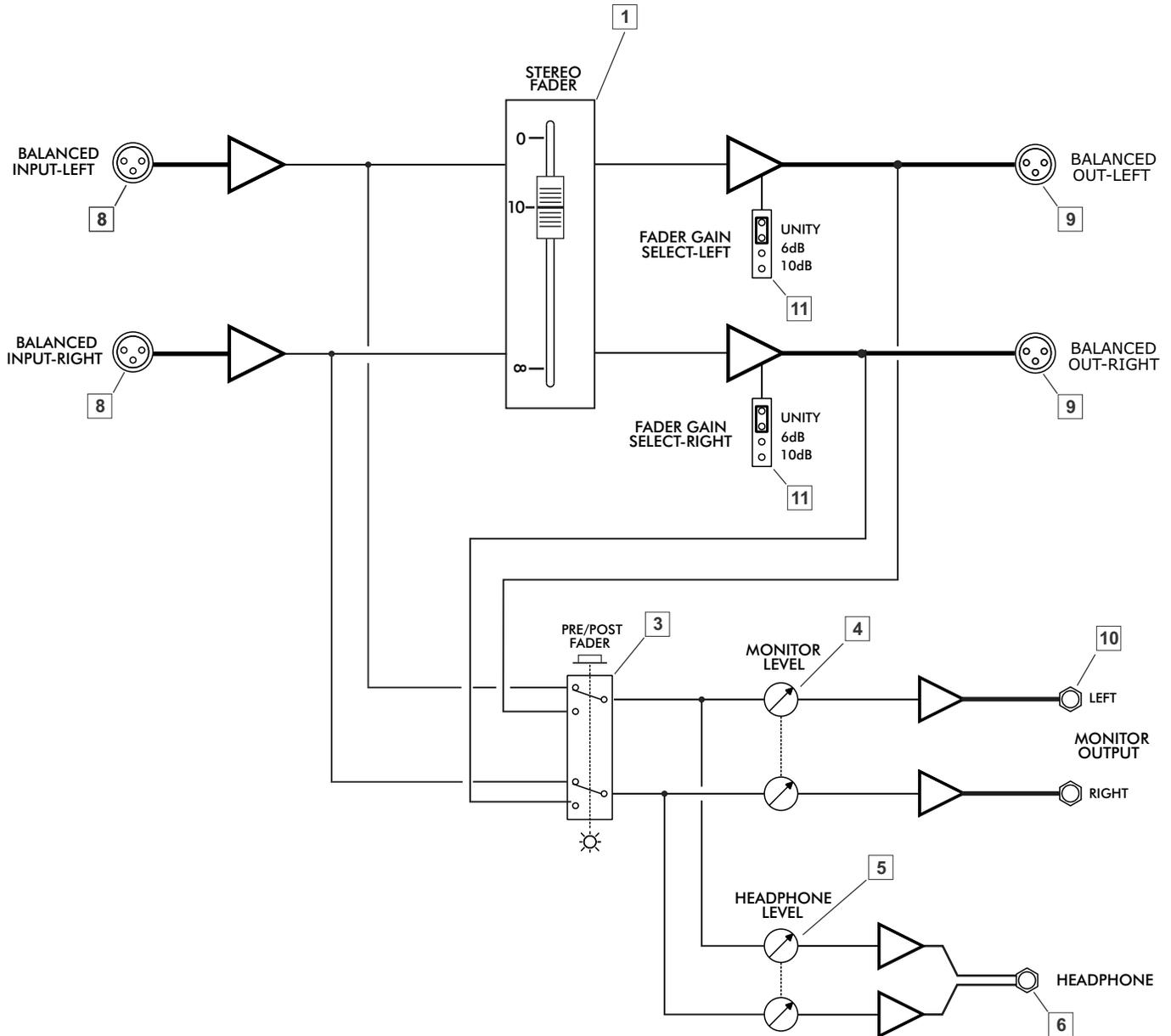
Due to the high performance of the **F.3.** it is recommended that you use only the highest quality audio cable. A high quality cable by definition is a cable that provides good mechanical strength, high microphonic noise immunity, high frequency response, low crosstalk, and 100% shielding ability. All audio cable used should be a 3 conductor foil shield type (2 inner conductors and a shield drain conductor). It is not recommended that the 2 conductor “off the shelf cables” be used.

All wire and cable interfaced to the **F.3.** should be terminated with high quality connectors. A ¼" plug or XLR connector should make a positive connection to its respective mating jack and provide adequate strain relief to its cable. All connectors should also have a metal shell to provide 100% shield for exposed conductors.

We do believe that “you get what you pay for” and advise not to purchase lower quality cables. We recommend that you purchase from a reputable cable manufacturer that uses brand name materials. Brand name cables include (in no particular order): Mogami, Canare, Belden, Gepco, Redco, and ProCo. Connector brands include Switchcraft and Neutrik.

### Signal Flow Diagram For Fader 3

Use this channel signal flow diagram shown below as a reference when reading the descriptions of the controls and connectors [1] through [11] in this chapter.



## Fader 3 Top Panel

### 1. Stereo Fader

This stereo 100mm slide fader adjusts the level of the left and right channels and has a range of  $\infty$ dB to 10dB. The operation of the slide fader simultaneously adjusts the level to the left and right XLR line outputs. The “0” mark is the “unity gain” setting for the fader channel.

#### Fader Input to Fader Output Gain

With a balanced +4dBu signal present at the XLR line input, the fader set to the “0” mark, and the Gain Select jumper in the default (0dB) position, the corresponding balanced XLR line output will be +4dBu.

With the gain jumper in the 6db or 10dB position and the slide fader set at the “10” mark, this will give the channel a total of 16dB or 20dB of gain respectively.

### 2. Power LED

This LED will illuminate green when power is applied to the Fader 3.

### 3. Pre/Post Select

This switch selects the source of the monitor and headphone level controls. In the “Up” position the monitor and headphone signal source is Pre (before) the slide fader. In the “Down” position the monitor and headphone signal source is Post (after) the slide fader. A yellow LED will illuminate when this switch is in the Post position.

### 4. Monitor Level Control

This stereo potentiometer adjusts the overall level to the stereo Monitor Output Jacks on the rear panel and typically controls the volume to a stereo power amplifier or powered speakers. The source of the headphone level can be either “Pre” or “Post” the slide fader and is selected with the Pre/Post Select Switch.

### 5. Headphone Level Control

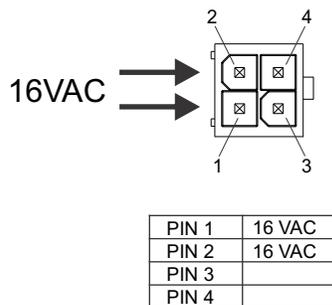
This stereo potentiometer controls the volume of the stereo headphone jack that is located on the front panel. The source of the headphone level can be either “Pre” or “Post” the slide fader and is selected with the Pre/Post Select Switch.

### 6. Headphone Jack

This standard 1/4” TRS headphone jack will accommodate most popular stereo headphones and is adjusted with the Headphone Level Control. The tip of the 1/4” jack is the left headphone signal, and the ring of the jack is the right headphone signal.



## Fader 3 Rear Panel



Power Inlet Pins



### 7. Power Inlet

The cable from the PS4-F power module connects to this 4-pin square connector. This connector and its respective plug are keyed so they will only fit in one direction. For power module installation instructions, refer to the Installation Section on page 4 of this manual.

As shown in the connector illustration “Power Inlet Pins” the 16VAC from the external power module is connected between pin 1 and pin 2.

### 8. XLR Line inputs

There are two XLR connectors for the fader line inputs. These balanced inputs will accept a +4dBu reference signal. The XLR active-balanced input is suitable for any high level line source.

### 9. XLR Line outputs

There are two XLR connectors for the fader line outputs. With a balanced +4dBu signal present at the line inputs and the slide fader set to the “0” mark, the balanced XLR line outputs will be +4dBu.

### 10. Monitor Output Jacks

These balanced 1/4” TRS jacks are available for hooking up a power amp or powered speakers. The signal present at these jacks is adjusted by the Monitor Master control on the top panel.

The pin configuration for all XLR connectors is:  
**Pin 1=Ground, Pin 2=High (+), Pin 3=Low (-)**

The pin configuration for all 1/4” TRS jacks is:  
**Tip=High (+), Ring=Low (-), Sleeve=Ground**

**NOTE - All active-balanced output circuits of the Fader 3 were designed for balanced lines and should only be connected to balanced inputs. If that is not possible and it is necessary to connect to an unbalanced input, care must be taken not to connect the low (-) terminal to ground. If the low (-) terminal of these outputs is connected to ground, the result may be a high level of audio distortion.**

## 11. Gain Select

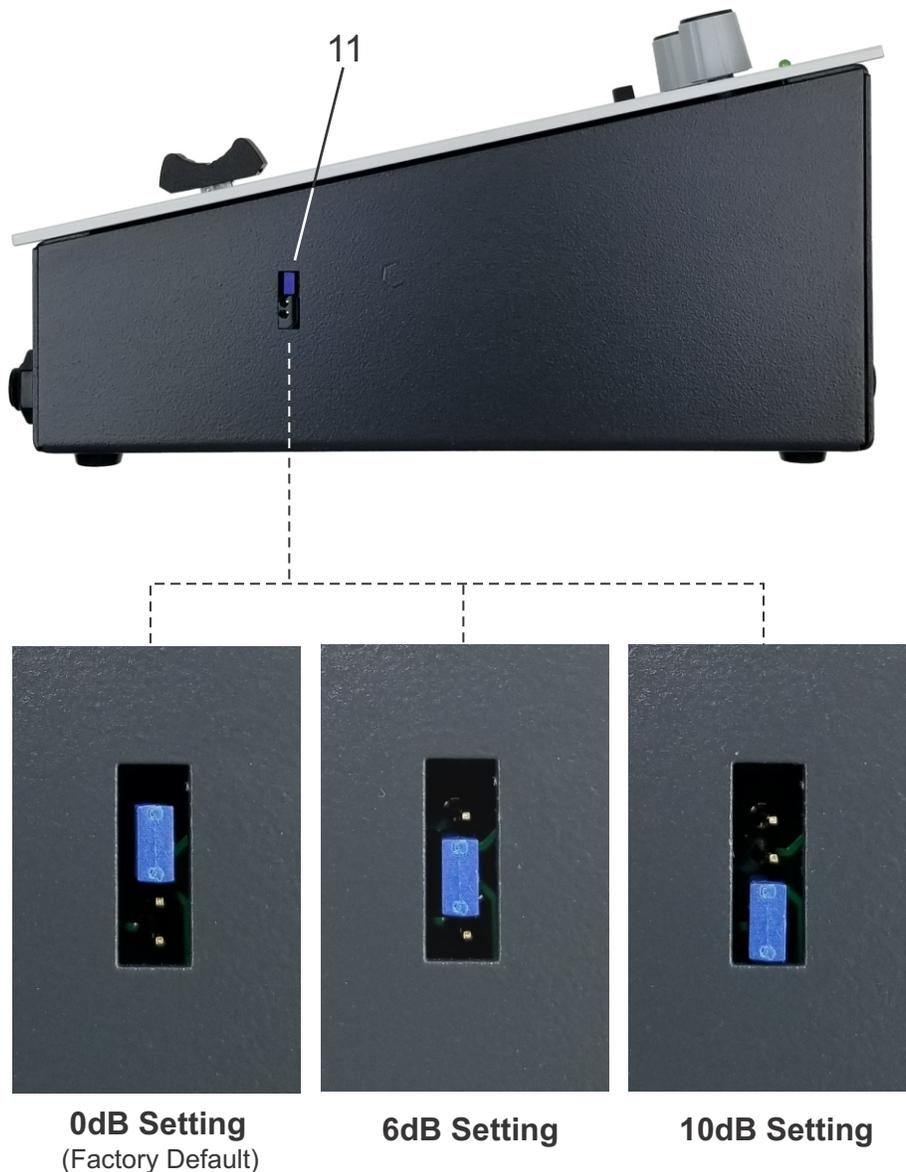
The **Fader 3** has three gain settings available: 0dB, 6dB, and 10dB. The factory default setting is for 0dB of gain. The gain select jumpers for the left and right channels are located on the respective left and right sides of the chassis as shown below.

### Fader Input to Fader Output Gain

With a balanced +4dBu signal present at the XLR line input, the fader set to the “0” mark, and the Gain Select jumper in the default (0dB) position the corresponding balanced XLR line output will be +4dBu.

With the gain jumper in the 6db or 10dB position and the slide fader set at the “10” mark, this will give the channel a total of 16dB or 20dB of gain respectively.

**Note:** Extra gain may be important when interfacing to unbalanced gear or when the source signal level is extremely low.



## Specifications

<b>Line input impedance</b> Balanced Unbalanced	30K ohms 15K ohms
<b>Maximum input level</b>	+28dBu
<b>Output Impedance</b> All Active-balanced outputs Headphone Impedance	60 ohms 75 ohms
<b>Maximum output level (2k load)</b>	+28dBu (Balanced) +22dBu (Unbalanced)
<b>Frequency Response (10 dB gain)</b> Fader line input to fader line output Fader line input to monitor line output	1Hz-94kHz (+0/- .5dB) 1Hz-75kHz (+0/- .5dB)
<b>THD+n</b> +4dBu at line input, fader set to "10" mark, +14dBu at line output.	.00075%
<b>Crosstalk (1kHz)</b> Channel to channel	-102dBu
<b>Noise (22Hz-22kHz)</b> Fader set at "0" mark Fader set at "10" mark Fader set at "∞" mark	-96dBu -91dBu -99dBu
<b>AC Power Requirements (Power Module)</b>	100-120VAC 50/60Hz .5 amp 220-240VAC 50/60Hz .25 Amp
<b>Weight</b>	2 Lbs (.9kg)
<b>Total shipping weight</b>	3 Lbs (1.4kg)

### Dimensions

