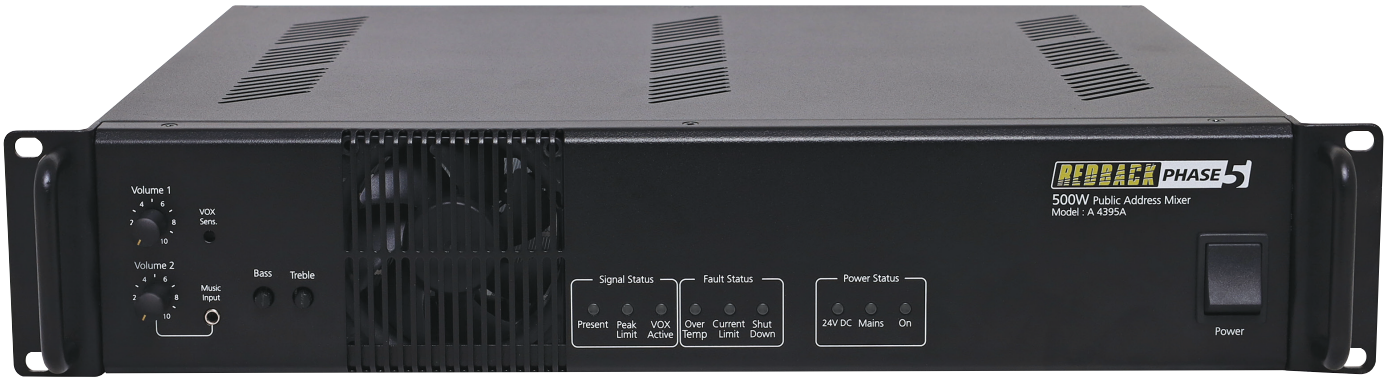


Operating Manual

A 4395A 500 Watt Mixer Amplifier

Redback® Proudly Made In Australia

IMPORTANT NOTE:

Please read these instructions carefully from front to back prior to installation.
They include important setup instructions.
Failure to follow these instructions may prevent the amplifier from working as designed.

User manual revision number: 1.0 22/09/2021

You may be surprised to learn that Redback is still manufacturing hundreds of product lines right here in Australia. We have resisted the move offshore by offering our customers better quality products with innovations to save them time and money.

Our Balcatta production facility manufactures/assembles:

Redback public address products
One-shot speaker & grill combinations
Zip-Rack 19 inch rack frame products

We strive to support local suppliers wherever possible in our supply chain, helping to support Australia's manufacturing industry.

Redback Audio Products

100% developed, designed & assembled in Australia.

Since 1976 we have been manufacturing Redback amplifiers in Perth, Western Australia. With over 40 years experience in the commercial audio industry, we offer consultants, installers and end users reliable products of high build quality with local product support. We believe there is significant added value for customers when purchasing an Australian made Redback amplifier or PA product.

Local support & feedback.

Our best product features come as a direct result of feedback from our customers, and when you call us, you speak to a real person - no recorded messages, call centres or automated push button options.
It's not only the assembly team at Redback who are employed as a direct result of your purchase, but hundreds more at local companies used in the supply chain.

Industry leading 10 year warranty.

There's a reason we have the industry leading DECADE warranty. It's because of a long tried and tested history of bullet-proof reliability. We've heard PA contractors tell us they still see the original Redford amplifier still in service in schools.

We offer this comprehensive parts & labour warranty on almost every Australian Made Redback public address product. This offers both installers and end users peace of mind that they will receive prompt local servicing in the rare event of any problems.

OVERVIEW

The Redback A 4395A is a 500 Watt Mixer amplifier for installations requiring a high power zone amplifier. Ideally suited for use in shopping centres, pedestrian precincts, public transport facilities and convention centres.
The amplifier has two audio inputs, with input 1 either a balanced XLR input or dual RCA line input, and input 2 a dual RCA. There is also a music input on the front of the amplifier for connection of portable devices. This input when connected, over-rides the rear input 2 audio source and is adjusted via the volume 2 level control.
A VOX circuit with front panel sensitivity adjustment, allows input 1 to mute input 2. Phantom power (15 volts) is available at the 3 pin XLR on input 1 and both inputs 1 and 2 have adjustable input sensitivies.
The amplifier has a host of protection circuitry including over current, over voltage and short circuit protection.

FEATURES

- Robust design incorporating latest Mosfet technology
- Very Low noise and distortion
- 70V, 100V and 4-16Ω outputs
- 240V AC or 24V DC operation
- 24V DC @ 1 Amp output for external devices
- 300mA battery trickle charge
- Adjustable input level sensitivities
- Bass and Treble controls
- Phantom power on microphone input (XLR Input 1)
- Multi stage thermally cued fan cooling
- Output Peak Limited
- Thermal Overload protected
- Signal Presence Indicators
- Fault Indicators
- Power Status Indicators
- Rack Mountable (suits 19 inch racks)

Fig 1 shows the layout of the front panel.

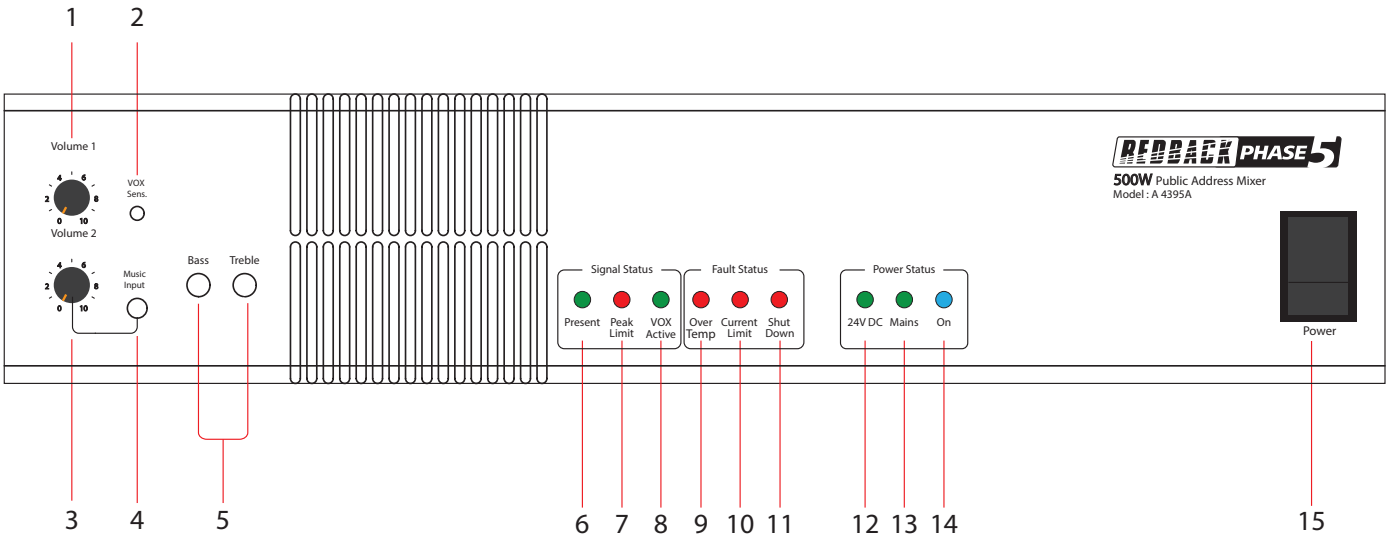


Fig 1

1 **Input 1 volume control**
Use this control to adjust the output volume of input 1.

2 **Vox level control**
Use this control to adjust the vox sensitivity of input 1.

3 **Input 2 volume control**
Use this control to adjust the output volume of input 2.

4 **Music Input**
Use this input to connect a portable music player. This input over-rides the rear input 2 and is adjusted via the volume 2 control.

5 **Bass and Treble Controls**
Use these controls to adjust the bass and treble.

6 **Signal Presence Indicator**
This LED indicates when an input signal is present.

7 **Peak Limit Indicator**
This LED indicates when the input signal is clipping.

8 **VOX Active Indicator**
This led indicates when the VOX muting is active.

9 **Over Temp Indicator**
This LED indicates when the amplifier is overheating. The output will be disconnected until the amplifier is once again cool enough to operate.

10 **Current Limit Indicator**
This LED indicates when the output is drawing too much current from the amplifier. The output will be disconnected until the current draw is reduced.

11 **Shut Down Indicator**
This LED indicates when the amplifier has an over temp occurrence or if the internal circuitry has a fault.

12 **24V DC Indicator**
This LED indicates when the amplifier is being powered from the 24V input.

13 **Mains Indicator**
This LED indicates when the amplifier is being powered from the mains (230V AC).

14 **On Indicator**
This LED indicates the unit has power.

15 **Power Switch**
Use this to turn the unit on.

Fig 2 shows the layout of the rear panel.

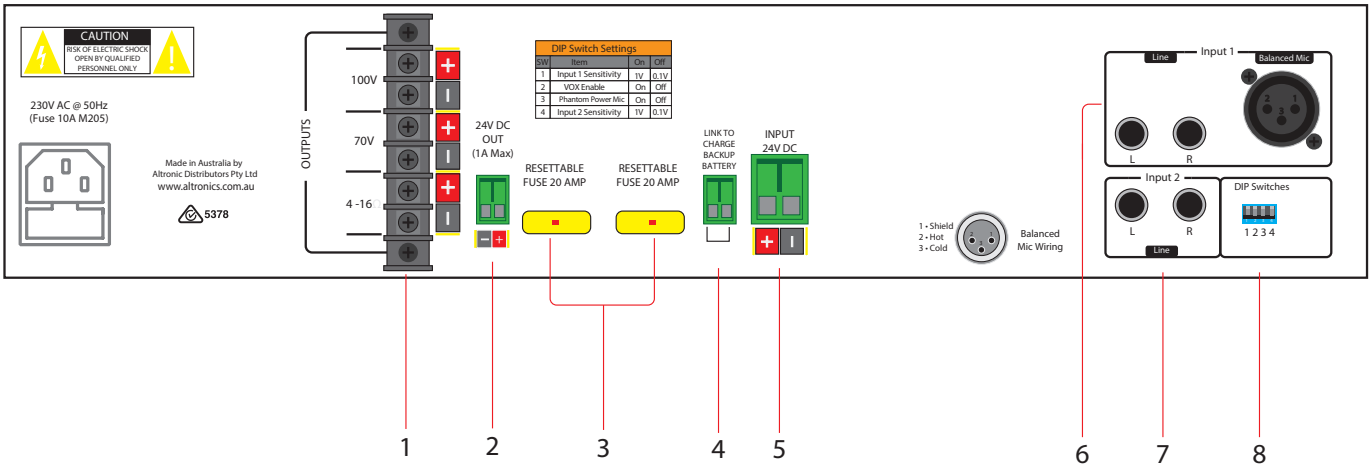


Fig 2

1 Output Connections

Speakers with total impedance of 4 to 16 ohms, or speakers fitted with a 70V/100V line transformer may be connected. Always ensure that the total load of the speakers does not exceed the rated output of the amplifier ie either 4Ω minimum for the 4-16Ω terminals or 20Ω minimum at 100V for 500W. Otherwise either the DC or mains fuse could blow or the fault led activate and the amp will shut down. Always be careful to avoid short circuits and connection to the wrong terminals.

2 24V 1A output

A constant 24V output terminal has been provided to power ancilliary 24V devices.

3 DC Resettable fuses

These fuses protect the internal power supply. If the fuses are tripped they are easily reset by pressing the small buttons on the fuses.

4 24V Backup battery charging

The A 4395A amplifier includes a charging circuit so that a backup battery connected to the amplifiers 24V DC Input can be trickle charged. The battery charger is connected to the battery internally when the link is fitted to this connector (see Fig 5 for more details). The battery will be charged at approximately 300mA.

5 24VDC IN

Battery Backup: Provision has been provided to run the amplifier from a suitably rated 24V battery system in the event of a mains failure. Using appropriately rated cable, connect the battery to the "24V DC In" terminals. Observe correct polarity when connecting. (see Fig 5 for more details)

6 Input 1

This input can be either a balanced XLR input or dual RCA line input with adjustable input sensitivities of 100mV or 1V. The line input dual RCA connectors are internally mixed to produce a mono input signal.

7 Input 2

This input is a dual RCA line input with adjustable input sensitivities of 100mV or 1V. The line input dual RCA connector is internally mixed to produce a mono input signal.

8 DIP Switches

These DIP switches set the input sensitivities of inputs 1 & 2, enable the VOX muting and enable the phantom power to the XLR input (see Fig 6 for more detail).

SPEAKER CONNECTIONS

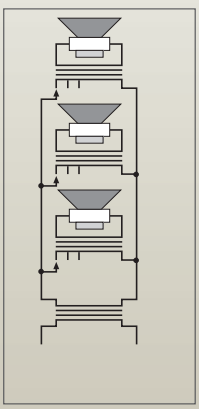
Speakers with a total impedance or 4-16Ω may be connected to the terminals marked 4-16Ω on the rear of the amplifier. Speakers fitted with line transformers (either 70V or 100V) may be connected to the corresponding terminals on the rear of the amplifer. Always ensure the total load of the fitted speakers does not exceed the rated output of the amplifier (ie 500 watts) otherwise damage may result. When fitting speakers with line transformers the impedance of the load cannot be measured using a standard multimeter. An impedance meter is required. Fig 3 lists the impedance at certain loads of speakers fitted with 70V and 100V line transformers. So for a total load of 500 watts using 100V line transformer fitted speakers, the impedance of the speaker load should be 20Ω.

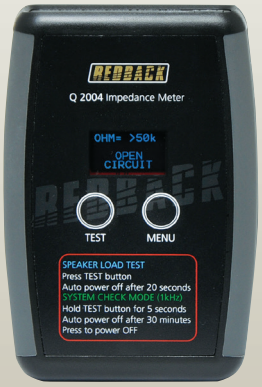
About 70V & 100V Line Speaker Systems

Wiring speakers in parallel for 70/100V line: Where several speakers are to be used at one time, on one circuit, it becomes necessary to use speakers fitted with line-matching transformers. This is to overcome the effects of connecting speakers in parallel and cable losses. The amplifier generally has an output voltage of 100 volts (70 volts is typically used in North America, however operation is similar). In this configuration the total wattage load on the amplifier is derived from adding all the line transformer primary tap ratings together. For example, 70 one watt speakers will have a total speaker load of 70 watts. Or alternatively, it is conceivable to connect 100 one watt speakers to a 100 watt, 100 volt line amplifier.

Measuring 70/100V Line Speaker Impedance: To measure amplifier system load, you must use an impedance meter in order to measure the ac resistance of the connected speaker network. Impedance cannot be measured with a standard multimeter, as this measures the dc resistance.

Load	70V	100V
0.5W	9.4kΩ	20kΩ
0.66W	7.12kΩ	15kΩ
1W	4.7kΩ	10kΩ
1.25W	3.76kΩ	8kΩ
2W	2.35kΩ	5kΩ
2.5W	1.88kΩ	4kΩ
3W	1.56kΩ	3.3kΩ
5W	940Ω	2kΩ
7.5W	626Ω	1.3kΩ
10W	470Ω	1kΩ
15W	313Ω	666Ω
20W	235Ω	500Ω
30W	156Ω	333Ω
40W	117Ω	250Ω
60W	78Ω	166Ω
100W	47Ω	100Ω
125W	37Ω	80Ω
250W	19Ω	40Ω
500W	9.4Ω	20Ω





Redback Q 2004

Fig 3

AUDIO CONNECTIONS

The amplifier has two audio inputs, with input 1 either a balanced XLR input or dual RCA line input which is internally mixed to create a mono signal. Input 2 is a dual RCA which is internally mixed to create a mono signal. Both inputs have adjustable input sensitivities of 100mV or 1V set by the DIP switches on the rear of the unit.
A music input on the front of the amplifier is also provided for connection of portable devices. This input when connected, over-rides the rear input 2 audio source and is adjusted via the volume 2 level control.
A VOX function is also included which when enabled will allow input 1 to mute input 2.

Fig 4 shows a typical install where the A 4395A has a balanced microphone connected to input 1 and a Line level source connected to input 2. If DIP switch 2 is set to "ON", the microphone will VOX mute the CD player connected to input 2.

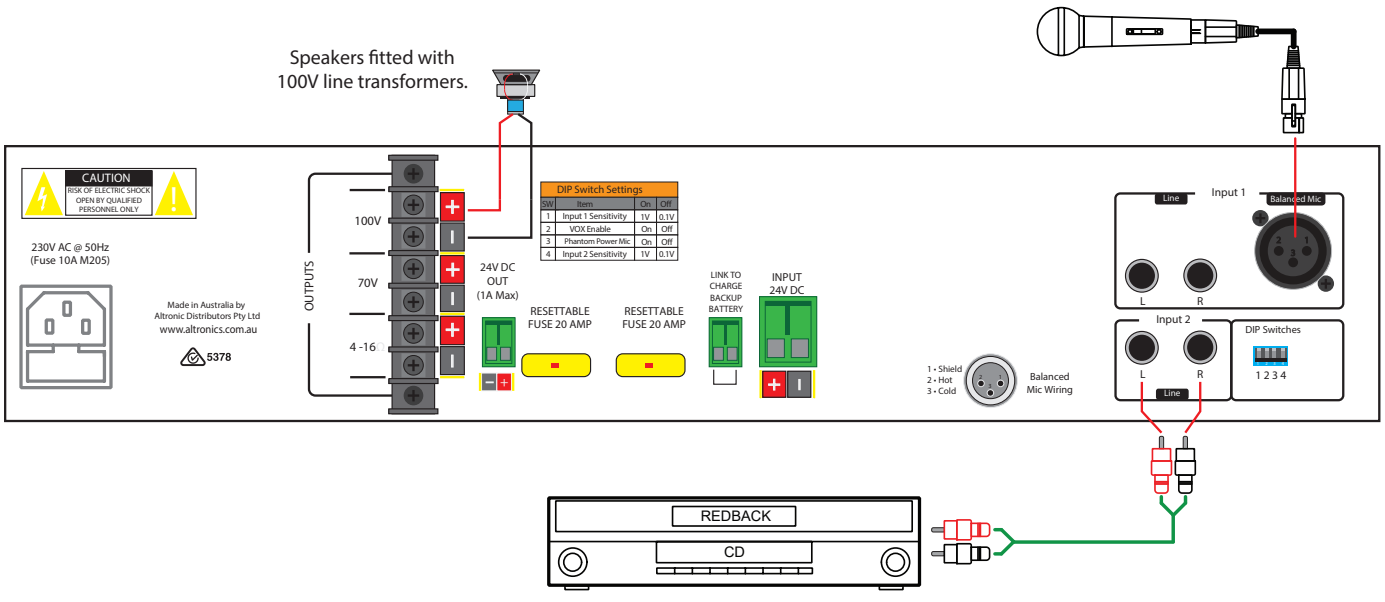


Fig 4

POWER SUPPLY

The amplifier operates on 230V AC or 24V DC primarily for battery backup operation. Ensure power is switched OFF at the front panel before connecting either mains power to the IEC socket or 24V DC to the screw terminal input. As high currents may be drawn when operating from a 24V DC supply confirm the capacity of the DC power supply used.

24V DC OUTPUT

A constant 24V output terminal has been provided to power ancilliary 24V devices. The output has a maximum current draw of 1 amp. If more than 1 amp is drawn from the output, internal polyswitches will disconnect the output. These will reset once the current draw is reduced.

24V BACKUP BATTERY CHARGING

The A 4395A amplifier includes a charging circuit so that a backup battery connected to the amplifiers 24V DC Input can be trickle charged. The battery charger is connected to the battery internally when the link is fitted to the charging link connector (see Fig 5 for more details). The battery will be charged at approximately 300mA.

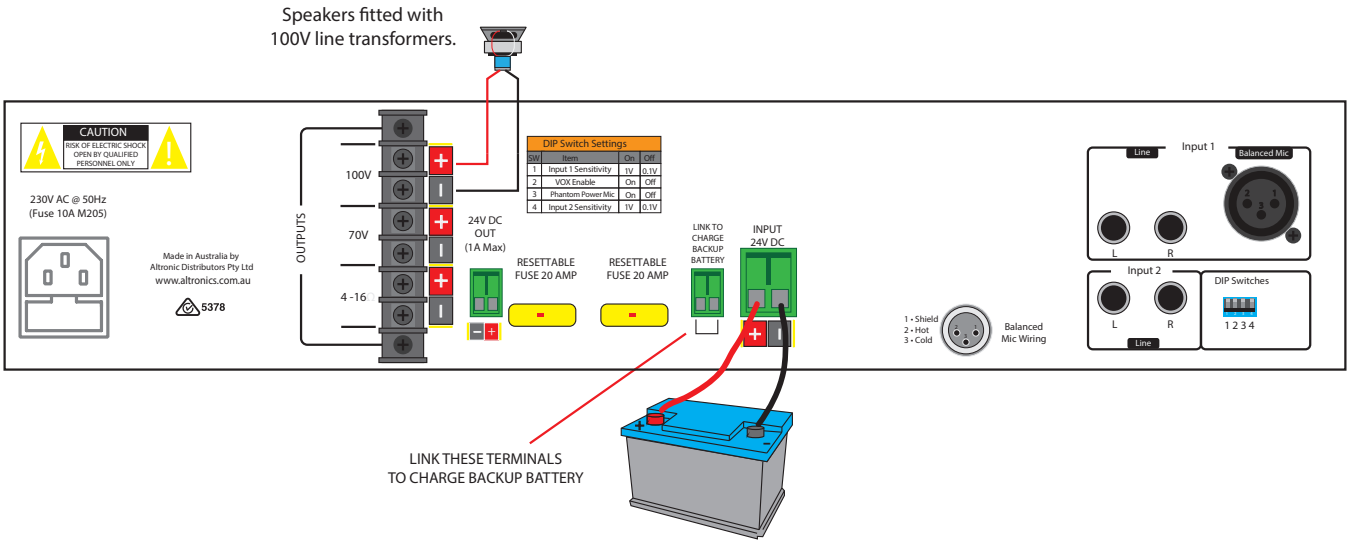


Fig 5

DIP Switch settings

The A 4395A amplifier has a set of options which are enabled via the DIP switches 1-4. See Fig 6.

DIP 1 sets the input level sensitivity for input 1 (either the balanced 3 pin XLR or Dual RCA's).
DIP 2 enables the VOX muting. When the VOX is active input 1 will mute input 2.
DIP 3 enables the phantom power to the XLR connector on input 1.
DIP 4 sets the input level sensitivity for input 2.

DIP Switch Settings			
SW	Item	On	Off
1	Input 1 Sensitivity	1V	0.1V
2	VOX Enable	On	Off
3	Phantom Power Mic	On	Off
4	Input 2 Sensitivity	1V	0.1V

Fig 6

TROUBLE SHOOTING

If the REDBACK Phase 4 amplifier fails to deliver the rated performance, check the following:

No Power, No Lights
Make sure amplifier power switch is on. Make sure mains power switch is on at the wall. Check the mains and DC fuse. Replace with only the correct type and rating. Over rated fuses will invalidate warranty.

Distorted Output
Check that the speaker type is correct for the output that you are using (ie. 4-16Ω, 70V or 100V line). Check for any short circuits on the speaker line.

Very Low Output Volume
Make sure that the input is the correct level (check for shorted connectors). Check for any short circuits on the speaker line.
Check if signal LED on the front panel is lit to indicate there is signal. If it is not lit there is no signal present.

Continually Blows Fuses
Make sure that the speaker line is not shorted. Check speaker types, ratings and if on correct output.

Amplifier Keeps on Cutting In & Out
Make sure that there is adequate ventilation around the amplifier. Check the vent slots on the front,top and sides are not covered or blocked and the fan on the rear is functioning correctly. Check also speaker types, ratings and for any short circuits on the speaker line.

Backup Battery Not Charging
Make sure the link is fitted to the charging link connector

No Output From 24V DC
Make sure the 24V DC Out connector is wired correctly.

SPECIFICATIONS

POWER OUTPUTS
A 4395A: .....500 watts RMS
Distortion:..... < 0.5%, @ 1kHz
Output line: .....70V, 100V or 4 - 16Ω

FREQUENCY RESPONSE
Mic input:.....50Hz - 12kHz, -3dB
Line inputs: .....50Hz - 15kHz, -3dB

SENSITIVITY
Mic inputs: .....100mV or 1V
Line inputs:.....100mV or 1V

SIGNAL TO NOISE RATIO
Mic inputs: .....> 75dB below rated output
Line inputs:.....> 81dB below rated output

OUTPUT CONNECTORS
Speakers: .....Screw terminals

INPUT CONNECTORS
Inputs: .....3 pin XLR balanced or 2 x RCA
24V DC power: .....Screw terminals
240V AC power: .....IEC power connector

CONTROLS
Mic inputs: .....Volume
Line inputs:.....Volume
Bass:.....±10dB @ 100Hz
Treble:.....±10dB @ 10kHz
Power: .....On/off switch
Indicators:.....Power, signal present, output peak limiting, overtemp ,current limit, shutdown, VOX active, 24V DC, Mains
Power Supply: .....240V AC or 24V DC

FUSE PROTECTION
AC Fuse .....10A AC
DC Fuse ..... 20A DC

DIMENSIONS
.....≈483W x 410D x 88H

***Specifications subject to change without notice**