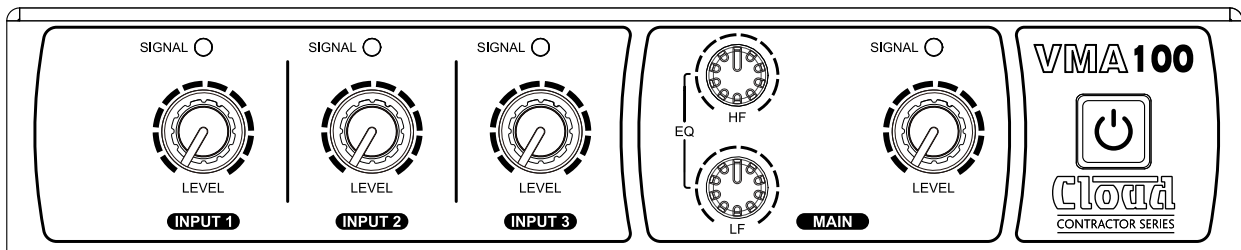


cloud

CONTRACTOR SERIES

VMA100

MIXER-AMPLIFIER



INSTALLATION GUIDE

WARNING:

To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.



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 appliance.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these Instructions.
2. Keep these Instructions.
3. Heed all Warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturers' 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 the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12.  Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus, when a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



Do not expose the apparatus to dripping or splashing, and ensure that no objects filled with water, such as vases, are placed on the apparatus.

L'appareil ne doit être exposé aux écoulements ou aux éclaboussures et aucun objet ne contenant de liquide, tel qu'un vase, ne doit être placé sur l'appareil.



The mains plug is used as the disconnect device and it should remain readily accessible during intended use. In order to isolate the apparatus from the mains, the mains plug should be completely removed from the mains outlet socket.

Le prise du secteur ne doit pas être obstruée ou doit être facilement accessible pendant son utilisation. Pour être complètement déconnecté de l'alimentation d'entrée, la prise doit être débranchée du secteur.



This apparatus is of Class I construction and must only be connected to a mains outlet socket with a protective earthing connection.

Safety Information

Safety Notes regarding Installation

- Do not expose the unit to water or moisture.
- Do not expose the unit to naked flames.
- Do not operate the unit in ambient temperatures above 35°C
- Do not touch any part or terminal carrying the hazardous live symbol ⚡ while power is supplied to the unit.
- Do not perform any internal adjustments unless you are qualified to do so and fully understand the hazards associated with mains-operated equipment.
- If the moulded plug is cut off the AC power lead for any reason, the discarded plug is a potential hazard and should be disposed of in a responsible manner.

Compliances

This product conforms to the following European EMC and Safety Standards:

- **EN 55032:2015+A1:2020** – Emissions
- **EN 55035:2017+A11:2020** – RF Immunity
- **EN 61000-3-2:2019+A2:2024** – Harmonic emissions
- **EN 61000-3-3:2013+A2:2021** – Supply voltage
- **EN IEC 62368-1:2020+A11:2020** – Electrical safety



Safety Considerations and Information

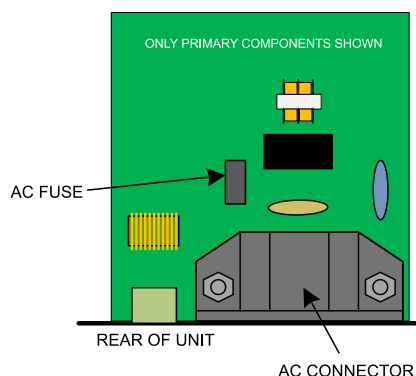
The CloudVMA100 must be earthed. Ensure that the mains power supply provides an effective earth connection using a three-wire termination.

Caution – Mains Fuse

Mains over-current protection is provided by an internal fuse. To replace the fuse, disconnect the power cable from the unit before removing the bottom panel (total 8 M3 c/sk screws): never touch any internal components with the unit switched on. Only replace the fuse with one of an identical type and rating:

Fuse type	T3.15A 250V time-delay radial lead micro fuse
Fuse size	8.3 x 4.3 mm
Fuse rating	3.15 A

The diagram below indicates the fuse location:



If the replacement fuse blows immediately, the unit is faulty and should be referred to qualified servicing personnel. Only reassemble the unit using the same screws.

Caution – Servicing

Apart from the mains fuse, the unit contains no user-serviceable parts. All servicing should be referred to qualified personnel. Do not perform servicing unless you are qualified to do so.

Introduction

The Cloud VMA100 is a cost-effective mixer-amplifier for use in all types of commercial premises, such as pubs, bars, hotels and offices. It has been designed to be as simple to install and operate as possible while offering a useful range of features and configuration options.

The unit is a mono power amplifier combined with a simple mixer input section. The amplifier features a transformerless output stage and is intended for driving 70/100V-line loudspeaker ("Hi-Z") distribution systems directly. A high-pass filter, selectable on the rear panel, minimises the effect of transformer saturation at low frequencies when driving Hi-Z systems.

The mixer section has three channels, each of which can accept mic or line level signals. Channels 2 & 3 have stereo inputs; the L & R inputs are summed internally to mono. Channel 1 can be configured to have priority over Channels 2 and 3. All user controls are on the front panel.

All inputs and outputs are on the rear panel, which also has connections for a music mute control input for connection to an emergency system, an interface for an external contact closure priority trigger (e.g., a paging mic press-to-talk switch), a port for connection of a remote volume control, and a balanced auxiliary output (e.g., to allow additional power amplifiers to be slaved). The rear panel also has various switches and controls that will normally only need to be set at initial installation.

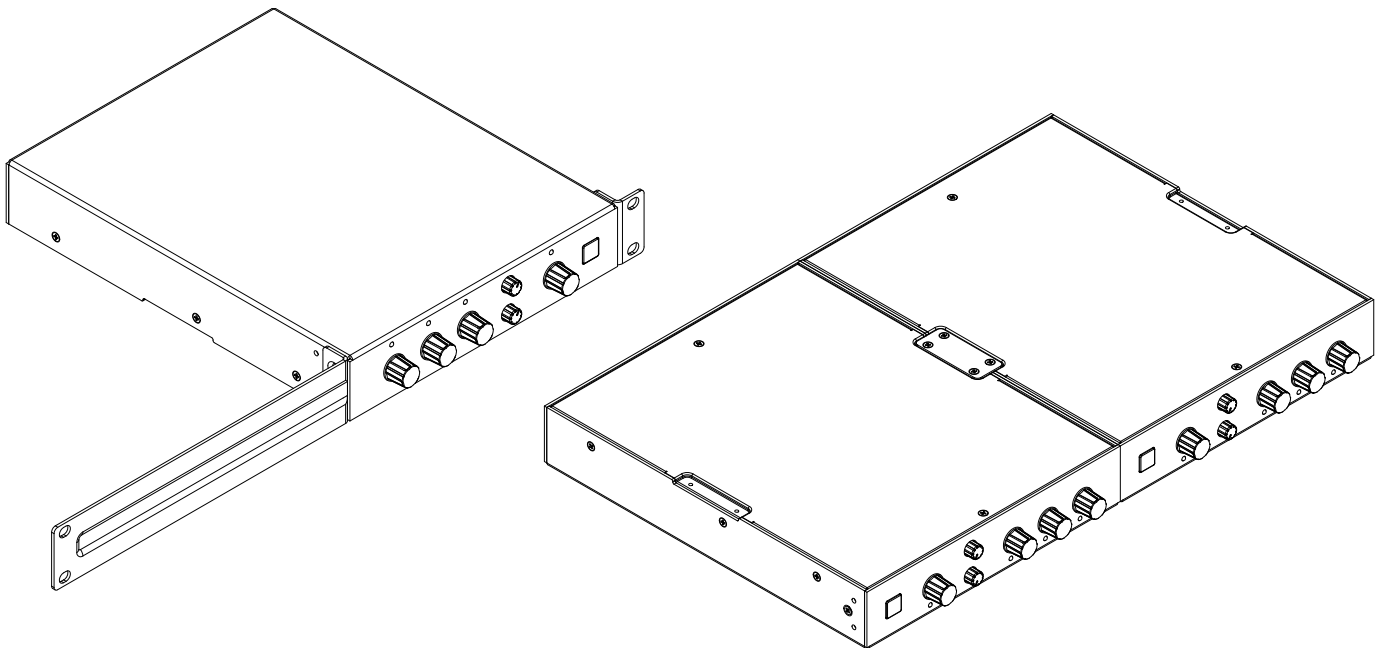
Rackmounting the VMA100

The VMA100 is 1U high, and one-half a standard 19" equipment rack width. To install the VMA100 in a 19" rack, the Cloud HALF-U RACK KIT is required.

The HALF-U RACK KIT consists of two rack ears, a blank half-rack width panel for mounting a single VMA100, a joining bracket for mounting two VMA100s side-by-side, and a set of fixing screws.

Rackmounting a single VMA100: Using two of the M4 c/sk screws supplied with the kit, fit the half-rack extension plate to one side of the VMA100, using the two empty M4 tapped holes nearest the front. It may be fitted to either side; the diagram below shows it fitted on the left. Fit one of the rack ears to the other side in the same manner.

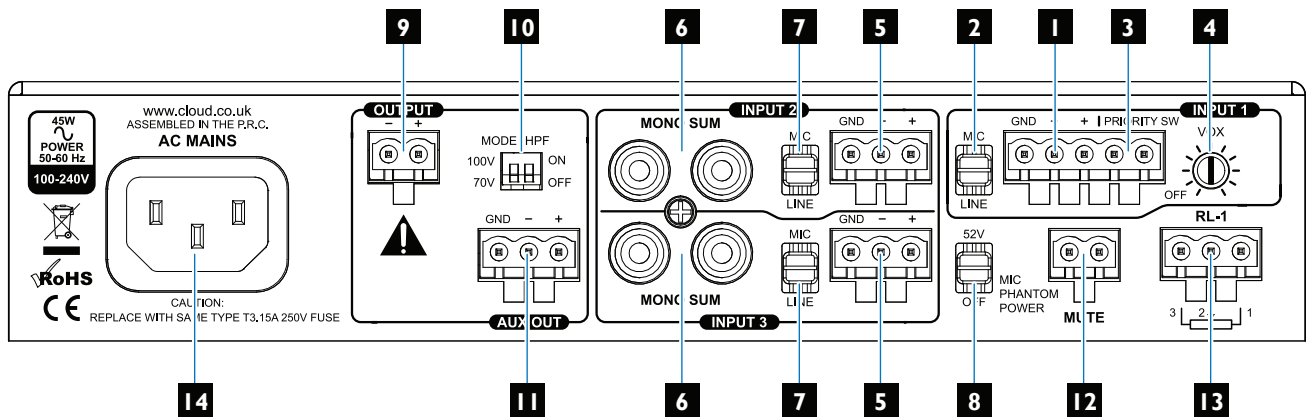
Rackmounting two VMA100s: Fit one rack ear to each VMA100, one to a left-hand side, the other to a right-hand side, using the M4 c/sk screws supplied. Place the two VMA100s upside down, side-by-side as shown in the diagram below. Fit the joining bracket to the base of the two units, using the M3 c/sk screws supplied.



VMA100 with rack ear and half-rack extension

Two VMA100s in rack mount kit

Rear panel – connections and controls



- 1 INPUT 1** – balanced input for Channel 1. The connector uses the three left-most pins of a 5-pin, 5 mm-pitch detachable screw-terminal connector (Eurobloc type). Use the mating 5-pin connector supplied. See rear panel for pinout.
 - 2** Mic/line switch for Channel 1. Sensitivity is -36 dBu in **MIC** mode, +4 dBu in **LINE** mode.
 - 3 PRIORITY SW** – this will typically be used to connect a NO (normally-open) press-to-talk switch on a paging microphone. Connect the PTT switch to the two right-most pins of the 5-pin Eurobloc connector. The paging mic in use should be connected to **INPUT 1**; while the switch is pressed, Channels 2 and 3 will be reduced in level allowing announcements to be made. If using this priority method, set the **VOX** control [4] to the OFF position (fully anticlockwise). Note that the priority switch is still functional when Channel 1 is connected to a line level source and switch [2] set to **LINE**.
 - 4 VOX** – adjusts AVO (automatic voiceover) sensitivity. When active, a signal at Input 1 will automatically trigger priority and reduce the levels of Channels 2 and 3, provided the signal at Input 1 exceeds the threshold set by the **VOX** control. This facility is an alternative method of providing paging mic priority to the priority switch [3], but is also useful when Input 1 is connected to a jukebox, message store or similar. Adjust the **VOX** control by simple testing: the control should be set so that the priority always becomes active when the usual triggering input (Mic or Line as appropriate) is active.
 - 5 INPUTS 2 and 3 (a)** – balanced inputs for Channels 2 and 3: a 3-pin Eurobloc connector for a microphone or mono line level source. A mating connector is supplied. See rear panel for pinout.
 - 6 INPUTS 2 and 3 (b)** - two phono (RCA) connectors for unbalanced line level connection of stereo line level sources such as CD players, PCs, satellite/TV receivers, etc. The stereo inputs are summed internally to mono.
- NOTE:** Connection of external audio sources to both the Eurobloc and phono connectors simultaneously is not recommended.
- 7** Mic/line switches for the Eurobloc inputs to **INPUTS 2 and 3**. Sensitivities are as for **INPUT 1**: note the stereo phono inputs are line level only and are not affected by this switch.
 - 8 MIC PHANTOM POWER** – makes 52 V phantom power available at the Eurobloc connectors for all three inputs.

NOTE: if phantom power is ON, we recommend that line level sources are only connected to the phono (RCA) input connectors for Inputs 2 and 3, as the presence of phantom power at the Eurobloc connector may damage the external equipment.

- 9 OUTPUT** – main amplifier output for driving 70/100 V-line loudspeaker distribution systems.



Do not attempt to make connections to this output while the mixer-amplifier is powered, as there may be voltages present at the terminals of sufficient magnitude to cause an electric shock.

- 10 MODE/HPF switch** – 2-pole DIPswitch. The **MODE** switch configures the output stage for driving either 100 V-line (switch up) or 70 V-line (switch down) loudspeaker systems. The **HPF** switch inserts an 80 Hz high-pass filter into the amplifier power stage (post the master level control) when set to ON (switch up). Reducing the LF content of the output signal helps prevent transformer core saturation in the loudspeakers, and the consequent distortion this can produce.
- 11 AUX OUT** – a balanced output on a 3-pin Eurobloc type connector. See rear panel for pinout; a mating connector is

supplied. This connector carries a line level signal derived from the output of the mixer stage and is suitable for connecting to the inputs of additional power amplifiers. The output will follow an active mic-over-music priority state, but is not affected by the main output **LEVEL** control, the emergency mute input, or a remote volume control.

- 12 MUTE** – a 2-pin Eurobloc type connector. Shorting the pins together will mute the VMA100's main output. Connecting **MUTE** to a suitable pair of normally-open contacts on a fire alarm panel (or similar system) may aid compliance with local emergency regulations. The Auxiliary Output is not affected by the emergency mute function.
- 13 RL-I** – a 3-pin Eurobloc-type connector. A standard Cloud RL-I remote level control plate may be connected here using 3-core or twin-and-screen cable, enabling control of volume from a remote location (normally in the area covered by the VMA100). See rear panel for pinout. Note that the level at the Auxiliary Output will not be affected by the remote plate.
- 14 AC MAINS** – connect AC mains here using the cable supplied, which will have a mains plug suitable for your territory. Only use a 3-wire connection, to ensure the unit is earthed (grounded).

Automatic Power-down

The VMA100 has an Automatic Power-down (APD) feature which puts the mixer-amplifier into a standby state if no input signals are detected for 22 minutes. This minimises power consumption and heat production. The unit “wakes up” immediately on re-application of an input signal.

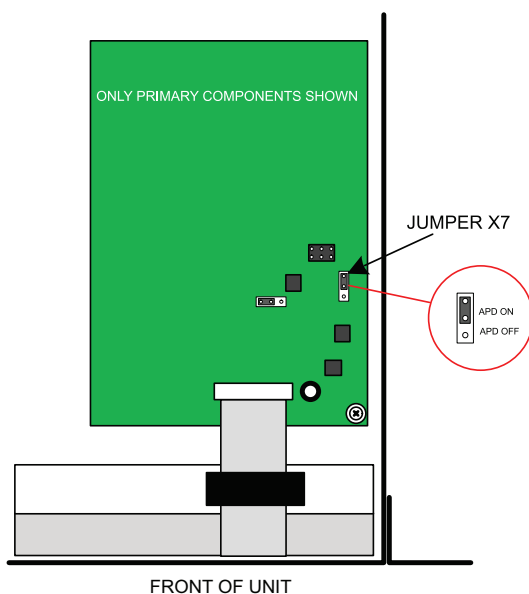
The VMA100 is shipped with APD enabled. If installation circumstances require the amplifier to be permanently powered, APD may be disabled by moving internal jumper X7.



WARNING – DANGER

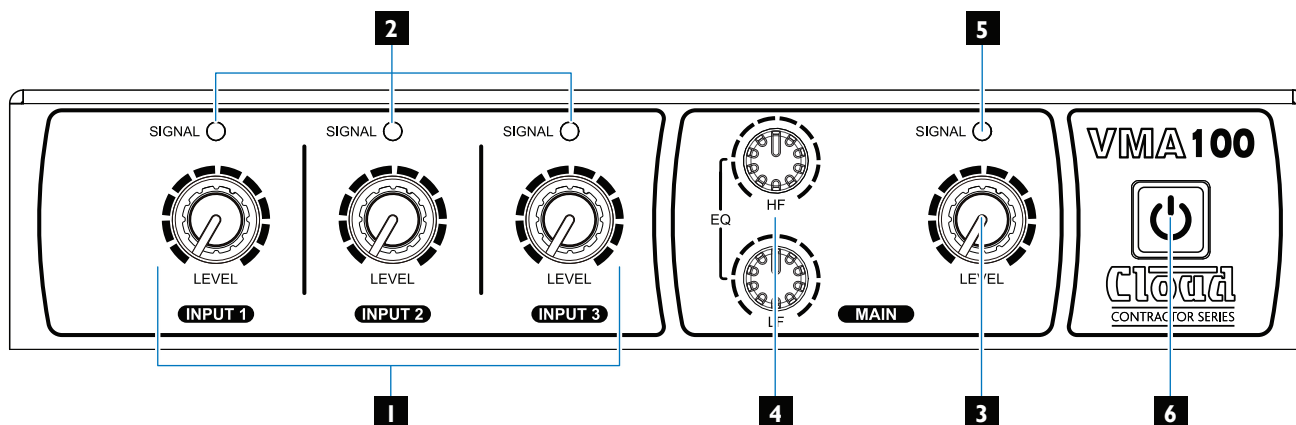
Changing the APD setting needs the unit to be opened. Prior to opening the unit, disconnect it from the AC supply. Any work on an open unit must be performed by qualified personnel.

To access jumper X7, disconnect the power cable from the unit before removing the bottom panel (total 8 screws): never touch any internal components with the unit switched on. With front panel nearest you, jumper X7 is near the right-hand edge of the main PCB, approx. 4 cm from the PCB's front edge. The diagram below indicates the location:



To disable APD, move jumper X7 from its default ON position to OFF (see legending on PCB). Only reassemble the unit using the same screws.

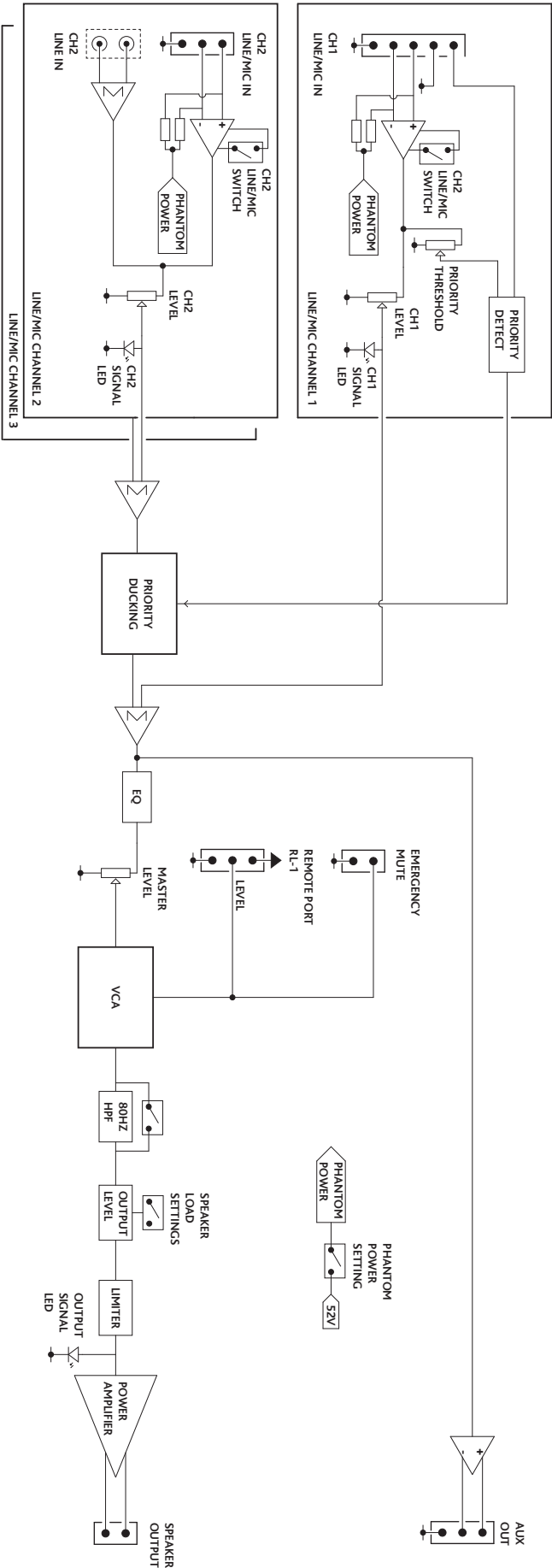
Front panel – connections and controls



- 1 INPUTS 1 to 3 LEVEL** – input level controls for Inputs 1 to 3 respectively. Use these controls to create a satisfactory mix of the inputs in use.
- 2 SIGNAL** – 3 bicolour LEDs, indicate signal presence (green) and peak level (red) in each input channel. Level detection is post the **INPUT LEVEL** controls [1].
- 3 MAIN LEVEL** – sets the signal level at the main output. Use this control to set the overall volume from the loudspeakers.
- 4 MAIN EQ** – adjust the **LF** and **HF** controls to optimise the VMA100's output to suit the loudspeakers in use and the acoustics of the room where they are installed. Bear in mind the various types of programme material that the system may be used with. The LF control allows ± 10 dB adjustment at 100 Hz, the HF ± 10 dB at 10 kHz.
- 5 SIGNAL** – bicolour LED, indicates signal presence at the main output (green) and activation of the power stage protection circuitry (red).
- 6 Power button** – controls the VMA100's power state and indicates current status via an internal tricolour LED:

COLOUR	STATUS
Red	Unit is off
Amber	Unit is in standby mode
Blue	Unit is operative

Block Diagram



Technical Specification

Line Inputs		
Frequency Response	20 Hz to 22 kHz, ±2 dB	
Sensitivity	+4 dBu (1.228 V _{rms})	
Input impedance	>10 kohms, balanced/unbalanced	
Headroom	18 dB	
Noise	<-90 dB (22 kHz bandwidth)	
Microphone Inputs		
Frequency Response	20 Hz to 22 kHz, ±3 dB	
Sensitivity	-36 dBu (12.28 mV _{rms})	
Input Impedance	20 kohms, balanced	
Headroom	18 dB	
Noise (EIN)	-95 dB	
Phantom Power	52 V, switched globally by rear-panel switch	
Main Output		
Equalisation	LF: ±10 dB @ 100 Hz; HF: ±10 dB @ 10 kHz	
Output Power (1 kHz continuous sine wave)	100 watts	
Minimum load	70 V-line	49 ohms
	100 V-line	100 ohms
Frequency response	20 Hz to 20 kHz, ±1 dB (80 Hz HPF off)	
THD + N	70 V-line	<0.06% @ 55 V output, 1 kHz <1% @ 70 V output, 1 kHz
	100 V-line	<0.06% @ 80 V output, 1 kHz <2% @ 100 V output, 1 kHz
Protection	Fixed level signal limiter; DC, over-current and over-temperature protection	
Auxiliary Output		
Nominal output level	+6 dBu (1.546 V _{rms}), balanced	
Noise	<-90 dB, 22 kHz bandwidth	
General		
Power input	Universal PSU: 100 to 240 VAC, ±10%; 50/60 Hz	
Fuse details	Time delay micro fuse (4.3 × 8.3 mm); rating 3.15 A	
Normal operating temperature	0 °C to 35 °C (Note: performance and specifications cannot be guaranteed outside of this range)	
Cooling	Natural	
Power Consumption	Standby ¹	1.65 W (17.01 VA)
	Idle ²	13.50 W (30.75 VA)
	1/8th Power ³	29.50 W (54.93 VA)
	1/3rd Power ⁴	53.40 W (89.00 VA)
Heat Loss	Standby ¹	5.90 kJ/hr (5.60 BTU/hr)
	Idle ²	48.60 kJ/hr (46.10 BTU/hr)
	1/8th Power ³	57.60 kJ/hr (54.60 BTU/hr)
	1/3rd Power ⁴	63.00 kJ/hr (59.70 BTU/hr)
Dimensions (W × H × D)	Net	220 mm × 44 mm (1U) × 303 mm 8.7" × 1.7" (1U) × 11.9"
	Shipping (Gross)	388 mm × 91 mm × 380 mm 15.3" × 3.6" × 15.0"
Weights	Net	1.9 kg /4.2 lbs
	Shipping (Gross)	2.61 kg /5.75 lbs

Notes re Power Consumption and Heat Loss measurements:

All measurements at 230 VAC 50 Hz power input

1. Standby: APD mode active, no inputs

2. Idle: amplifier active, but no audio output

3. 1/8th. Power: constant sound level at one-eighth maximum rated output (audio mainly clean, only occasional clipping)

4. 1/3rd. Power: constant sound level at one-third maximum rated output (audio beginning to become compressed, limited or heavily clipped)

Wiring
(Phoenix to various cable conections)

