

# MA1400

High performance power amplifier

## features

- ▶ Superior sonic performance
- ▶ Increased output current capacity
- ▶ Versatile input connections
- ▶ Removable dust filters
- ▶ Advanced protection circuits
- ▶ Multiple gain selection
- ▶ Soft Start



## applications

- ▶ Live sound reinforcement
- ▶ Fixed installations

The MA1400 is one of a versatile range of professional power amplifiers designed to meet the increasing demands of both the rental and installation markets whilst remaining cost efficient.

By harnessing a conventional toroidal transformer power supply with the latest semiconductor technology and a proprietary copper cooling system the MA1400 amplifier offers outstanding sonic performance, power and reliability in a shallow (359mm) 2U package.



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# MAI400

High performance power amplifier

## NEW CHASSIS

Hum fields created from conventional iron transformers, both toroidal and C-core, have always caused problems within amplifier racks, very often interfering with more sensitive equipment located in the vicinity. By incorporating different iron materials in a sandwich construction the magnetic hum field has been reduced to a minimum.

## MULTIPLE POSITION GAIN SWITCH

To meet the ever-increasing demands for a more flexible gain structure within systems the MAI400 amplifier offers a multiple position gain switch. This switch enables the maximum gain to be selected from a range of the most standard industry settings; 20, 23, 26, 29, 32, 35, 38 and 41dB.

## VERSATILE INPUT CONNECTION

The Neutrik Combo-jack offers both professional XLR and semi-pro TRS phono-jack inputs as standard and the Phoenix three pin terminal block makes for easier and cost effective installation connections.

## DUST FILTER

The MAI400 amplifier employs front to back cooling. To avoid unnecessary dust particles being drawn into the body of the unit a removable dust filter has been fitted to the front panel.

## LED INDICATORS

Status LED's indicate key amplifier functions. The protect LED will trigger if the amplifier channel has shut down due to a short circuit, over temperature or high frequency protection. The clip LED indicates severe clipping, whilst the signal present LED activates at -40dB below full level.

## SOFT START

The MAI400 has been fitted with a sophisticated soft start circuit. This circuit minimises the risk of breaker trips or blowing mains fuses due to the initial current surge experienced when the amplifier is powered up.

## PROTECTION

Two levels of DC protection are provided. DC current limiters, supplemented with power rail fuses, and crowbar DC output load protection.

Thermal Protection: Preventing the amplifier operating at an unsafe temperature.

AC Protection: If the AC mains voltage is outside the operational window the amplifier will automatically shut down.

V H F Protection: If high level, non-musical signals are detected that are above the audible frequency band, the amplifier is shut down.

Clip Limiter: Prevents severely clipped waveforms reaching the loudspeaker, but maintains full peak power.

## COOLING

The MAI400 amplifier runs very cool due to a patented heat exchanger. The output devices are mounted directly onto the copper heat exchanger avoiding thermal losses normally found when using pads. The heat exchanger is mounted horizontally in front of a pressure chamber. The air flow over the geometric fins is maintained by two proportional speed fans ensuring superior efficient cooling.

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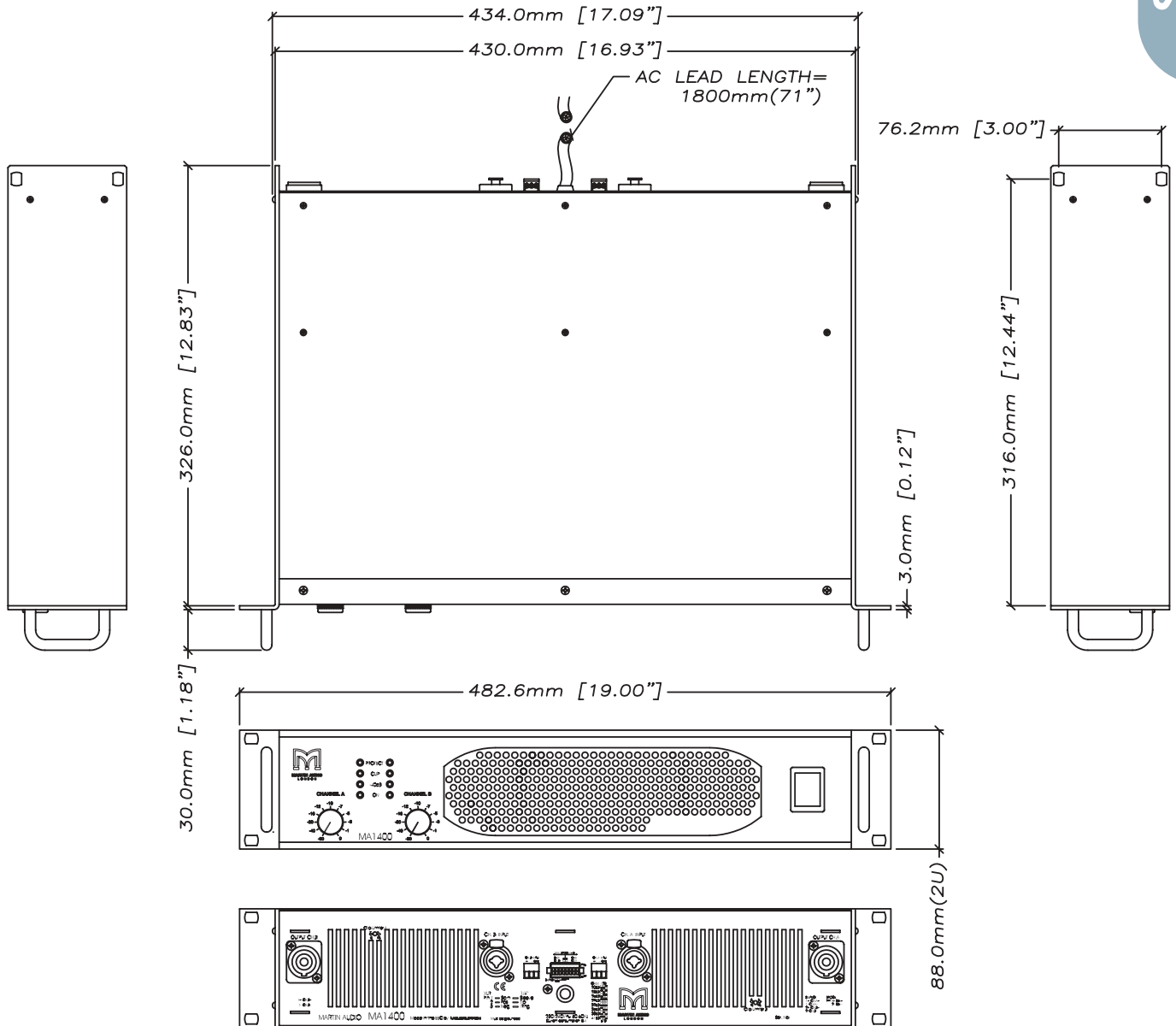


# MA1400

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overall dimensions

electronics



MA1400

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## technical specifications

<b>MAX OUTPUT POWER</b>	
EIA AT 1 kHz AND 1% THD	
8 PER CHANNEL	425 W
4 PER CHANNEL	700 W
2 PER CHANNEL	1050 W
8 BRIDGED	1400 W
4 BRIDGED	2100 W
<b>MAX OUTPUT VOLTAGE</b>	
8Ω LOAD	58 Vrms
PEAK VOLTAGE, NO LOAD	91 V
<b>DISTORTION</b>	
THD 20Hz – 20kHz AND 1 W TO FULL POWER	0.07%
THD AT 1kHz AND -1dB UNDER CLIP	0.01%
DIM AT -3dB UNDER CLIP	0.008%
<b>HUM AND NOISE</b>	<-105dB
<b>CHANNEL SEPARATION @ 10kHz</b>	70dB
<b>OUTPUT IMPEDANCE</b>	30 mΩ
SLEW RATE	45 V/μs
<b>INPUTS</b>	
GAIN SELECTABLE (dB)	20, 23, 26, 29, 32, 35, 38, 41
IMPEDANCE	20 kΩ (balanced) 10 kΩ single ended
COMMON MODE REJECTION	50dB
<b>FRONT PANEL</b>	
GAIN CONTROLS	31 position detent
INDICATORS: PROTECT	Yellow LED
INDICATORS: CLIP	Red LED
INDICATORS: SIGNAL PRESENT (-40dB)	Green LED
<b>REAR PANEL</b>	
INPUT CONNECTORS	Neutrik Combo + 3 pin Phoenix
CLIP LIMITERS	On/off each channel
<b>POWER</b>	
OPERATION VOLTAGE	150-260 V
SOFT START	Yes
PEAK INRUSH CURRENT	20 A
FULL OUTPUT POWER	230 V
MIN START VOLTAGE	180 V
115V OPTION	Yes
<b>CURRENT DRAW AT 4Ω/230V</b>	
QUIESCENT POWER (NO LOAD)	0.75 A rms
1/8 OF FULL POWER (-9dB)	5.2 A
1/3 OF FULL POWER (-5dB)	8.0 A
AT FULL POWER (0dB) @ 1kHz 1%THD	14.0 A
<b>DIMENSIONS</b>	
WIDTH	483mm (19ins)
HEIGHT	88mm (3.5ins) 2U
DEPTH (incl. handles)	359mm (14.1ins)
<b>WEIGHT</b>	17kg (37lbs)

### Trade Descriptions Act

Due to Martin Audio's policy of continuing improvement, we reserve the right to alter these specifications without prior notice. Martin Audio is committed to refining state of the art sound reinforcement, combining in-depth product and field applications research with advanced manufacturing techniques. Every Martin Audio product is built to the highest manufacturing standards and rigorously tested to ensure that it meets the performance criteria specified in the design.

## architectural and engineering specifications

The amplifier shall have two channels each capable of producing an output of 700 watts continuous average power at 1kHz and 1% THD EIA into a 4 ohm load with both channels driven. Each input shall be electronically balanced and have a CMRR of 50dB at any frequency between 20Hz to 20kHz. Each channel shall exhibit distortion of no more than 0.01% THD at 1kHz and -1dB under clip. Hum and noise shall be at least 105dB below full rated output power and channel separation shall be greater than 70dB at 10kHz. The input gain shall be selectable by rear-mounted switches between 20dB and 41 dB in 3dB steps. The front panel shall have LED indicators for each channel that will activate to show channel on, signal present (-40dB), clip and protect mode; also, individual channel gain controls each with a 31-position detent. To allow for a variety of input connection possibilities, each channel shall have a Neutrik Combo socket and a three pin terminal block mounted on the rear panel. Power output for each channel shall be via a rear panel mounted Speakon connector.

Dimensions (W) 483mm x (H) 88mm (2U) x (D) 359mm (19ins x 3.5ins x 14.1ins).  
Weight 17kg (37lbs).

The amplifier shall be the Martin Audio MAI400.

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