

## AM 4000 Series

■ The AM4160 is designed for continuous duty in speech, music, paging and sound reinforcement applications in churches, schools, offices, arenas, hotel meeting rooms, convention centers, recreation facilities and other venues demanding high performance, flexible features and rugged dependability.

■ Four microphone inputs are actively balanced, have XLR connectors, and can be programmed to interrupt or attenuate the line level inputs. Microphone inputs 2-4 feature switched 24V phantom power and switched high-pass and low-pass filters. Microphone Input 1 can be switched to line level, set to have priority over all inputs, and can be activated by either VOX with an adjustable threshold or a contact closure. Activation of any microphone override provides 18Vdc (300mA) at a barrier connector on the rear panel, which may be used to drive LEDs or relays. Two unbalanced, stereo Aux inputs are internally summed to mono and selected by a switch on the front panel. Two unbalanced Tape (auxiliary) line level outputs with a level control and an unbalanced signal processing loop are also provided. All are terminated to RCA connectors.

■ Output modes include 4Ω and 25V, 50V, 70V and 100V constant voltage. The smart output stage is fully protected against permanent damage caused by overloading, shorts and extreme temperature. The AM4160 will operate on either 115 or 230VAC, 50/60Hz supplied by a detachable IEC power cord. Insulated terminals to connect a backup 24Vdc battery are provided on the rear panel. Switchover to DC is automatic.

■ The front panel provides level controls for each Mic, selected Aux and Master volume, as well as the Bass and Treble shelving filters. The control knobs can be easily removed for security, and their recessed shafts covered with inserts supplied with the unit. LEDs indicate power, signal present at the output, peak and output overload. 12dB/octave Bass and Treble shelving equalization with up to 12dB of boost or cut at 100Hz and 10kHz can be applied to the output signal.

■ Accessories include an easily installed chime card.

■ This Mackie Industrial product is covered by an exclusive, one-time, NO FAULT repair policy in addition to a five year limited warranty.

## Integrated Mixer/Amplifier



## Features

- 4 Lo-Z, XLR Microphone Inputs
- 2 Stereo Auxiliary Inputs
- 160 Watt RMS, Convection Cooled
- 4Ω - 25V - 50V - 70V - 100V Outputs
- Switched 24V Phantom and H-P/L-P Filters
- 2 Tape/Aux Outputs with Level Trim
- Signal Processing Loop
- 2 RU Rack Mounting Kit included
- Automatic 24Vdc Backup Power Input

- Foreground/Background Music Systems
- Sound Reinforcement Systems
- Paging Systems
- Continuous-duty Applications

# AM4160 Integrated Mixer/Amplifier

## Specifications

### Performance

Amplifier Power:	160W, nominal, 220W peak (10mS)
Frequency Response:	50Hz–15kHz $\pm$ 3dB
Distortion:	Less than 1% THD at 1kHz nominal power
Noise:	Better than –65dB

### Equalization

Output:	Treble shelving: $\pm$ 12 dB at 10kHz Bass shelving: $\pm$ 12 dB at 100Hz
Inputs 2–4:	H-P filter: 12dB/oct. at 300Hz L-P filter: 12dB/oct. at 7kHz

### Audio Inputs

Microphones:	Three, active balanced XLR, LoZ, 1.3mV, 24V phantom powering with on-off switch
Microphone/Line:	One, active balanced XLR and parallel barrier, switched mic/line; Mic: LoZ, 1mV, Line: 80mV
Line Level:	Three, unbalanced, RCA connectors. Two each, left and right (summed) Aux, either pair selectable via front-panel switch, 100mV; One, Main (signal processing return), 775mV

### Audio Outputs

Number of Channels:	One
Low Impedance:	4 $\Omega$
Constant Voltage:	25V, 50V, 70V, 100V Barrier connectors
Line Level:	One, signal processing output 2.5V, 600 $\Omega$ Two, tape (auxiliary) outputs 0–2.2V, RCA connectors

### Control Inputs & Outputs

DC Outputs:	LED relay output, aux DC output: 18Vdc (300mA) activated by priority
Inputs:	Priority switch input, dry contact closure barrier connectors

### Controls

Front Panel:	Power switch, master Volume, Inputs 1–4, Aux level, Aux 1/2 switch, Treble shelving, Bass shelving
Rear Panel:	Tape output level, Voice priority threshold, Chime output level (if installed), 24V phantom on/off switch, H-P Filter in/out switch, L-P Filter in/out switch, Source Voltage Selector switch

### Power Supply

115/230Vac ( $\pm$ 5%), 50/60Hz, 550VA,  
DC (24V battery) 14A/Hr

### Environment

Maximum Ambient:	131°F (55°C), Non-precipitating humidity
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### Physical

Dimensions (HxWxD):	3.46" x 17" x 12.4" (88mm x 431mm x 314mm)
Weight:	28.65lbs. (13kg)
Finish:	Black painted or treated steel, white nomenclature


### Warranty

3 years, parts & labor  
one-time, no-fault repair policy

### Accessories


A1708	Three Chime Card
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# AM4160 Integrated Mixer/Amplifier



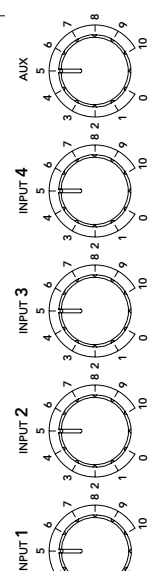
**AM 4160 - P.A. AMPLIFIER**

OVERLOAD SIGNAL PEAK ON




POWER

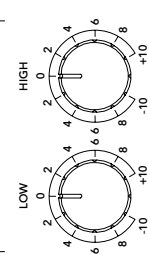
INPUT LEVELS



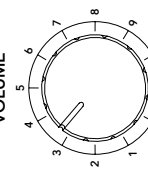
AUX




EQ




VOLUME



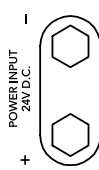


COMMANDS




CE

POWER INPUT




24V D.C.

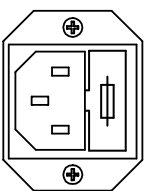
D.C. FUSE



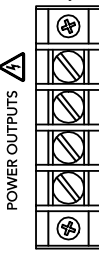
VOLTAGE SELECTOR



LINE ~ 115/230V




POWER OUTPUTS




0 50V 70V 100V


TAPE OUT




CHIME LEVEL



OUTPUT LEVEL




POWER OUTPUTS




0 4Ω 25V


AUX IN




VOICE THR




MAIN IN




INPUT 1




PHANTOM 24V



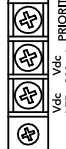
LINE MIC




OFF ON




INPUT 2




PHANTOM 24V




LINE MIC




OFF ON




INPUT 3




PHANTOM 24V




LINE MIC




OFF ON




INPUT 4




PHANTOM 24V



LINE MIC



OFF ON



CONCEIVED, DESIGNED, AND MANUFACTURED BY MACKIE INDUSTRIAL - MADE IN ITALY

TRADEMARKS OF MACKIE DESIGN INC. "MACKIE", "MACKIE INDUSTRIAL" & THE "TRAINING MAN" FIGURE

# AM4160 Integrated Mixer/Amplifier

## Architects' and Engineers' Specifications

The integrated mixer/amplifier shall have a nominal output power of at least 160W RMS. It shall operate on 115VAC or 230VAC at either 50Hz or 60Hz and have its source power supplied by a detachable IEC power cord. In addition the unit shall be capable of being directly powered by a 24Vdc source, such as storage batteries. It shall have a power switch on the front panel. The unit shall have a constant-impedance output to drive a 4Ω load at its rated output. It shall also have 25V, 50V, 70V and 100V constant-voltage outputs with like performance.

Inputs to the unit shall include: at least four actively balanced microphone; two unbalanced, stereo Aux; and an unbalanced signal processing return. Outputs shall include: at least two unbalanced Tape (auxiliary) with a common, continuously variable level control; and one signal processing send. Balanced connections shall be made through XLR connectors and unbalanced connections through RCA connectors.

Microphone Input 1 shall have adjustable sensitivity between mic and line, selected by a switch on the rear panel. This input shall also be programmable to completely exclude or attenuate all other inputs when its priority link is activated by either a contact closure or a VOX circuit, with a continuously adjustable threshold. The XLR connector for Input 1 shall be wired, in parallel, to a barrier strip on the rear panel. Microphone inputs 2-4 shall have a 24V phantom powering circuit that can be disabled with a switch on the rear panel. These inputs shall be equipped with a high-pass filter and a low-pass filter having a response of 12dB/octave and fixed -3db points at 300Hz and 7kHz, respectively. Each of these filters shall be enabled by a switch on the rear panel. Additionally, these inputs shall be programmable to completely exclude or attenuate all other inputs except for microphone input.

Two auxiliary voltage outputs shall be provided on the rear panel to drive accessory relays and LEDs. The relay output shall deliver +18Vdc at 300mA. Voltage shall go high when any microphone priority function is active.

The unit shall have, on its front panel, continuously variable controls for each microphone input, the auxiliary input that has been selected, a master volume control as well as bass and treble shelving filter controls. The shelving filters shall have a range of ±12dB, with the frequency for the bass

fixed at 100Hz and the treble fixed at 10kHz. LED status indicators shall be provided on the front panel to indicate power, signal present at the output terminals, peak signals near clipping and an overload condition.

The integrated mixer/amplifier shall be a model AM4160, manufactured by Mackie Industrial.




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Electronic files for this product available at:  
[www.mackieindustrial.com](http://www.mackieindustrial.com)

This Specification Sheet	AM4160.PDF
Quick-Start Manual	AM4160QS.PDF
Owner/Operator's Manual	AM4160ML.PDF

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