

- 20 The **COMMANDS PRIORITY** terminal provides access to the priority function for Inputs 1-4 over the AUX input by using an external normally-open switch to short-circuit the COMMANDS PRIORITY terminal to the GND (ground) terminal. Enabling the COMMANDS PRIORITY function also activates the Vdc LED and Vdc 300mA outputs, as well as the optional chime board (A1708).
- 21 This **GND** terminal is the common connection point for Vdc LED, Vdc 300mA, and COMMAND PRIORITY.
- 22 AC Protection Fuse protects the power supply and amplifier circuitry. Replace only with same type fuse.
- 23 Connect the supplied AC linecord to the IEC AC Socket. The AC line fuse is contained in the socket, behind the cover located at the bottom of the socket. Replace only with same type fuse.
- 24 The **VOLTAGE SELECTOR** switch is used to select the supply voltage for the amplifier. Move switch so the AC line voltage used appears on the switch (DOWN for 115V, UP for 230V).
- 25 The **CHIME LEVEL** control is used to adjust the level of the chime signal if the optional A1708 Chime board is installed. Use a small screwdriver to adjust the control clockwise for more signal, counterclockwise for less signal.
- 26 The **OUTPUT LEVEL** control adjusts the TAPE OUT level. Use a small screwdriver to adjust the control clockwise for more signal, counterclockwise for less signal.
- 27 The **TAPE OUT** jacks are RCA-type connectors for connecting to the inputs of a tape recorder or other recording device. The signal at the TAPE OUT jacks is pre-EQ and Master VOLUME control.
- 28 **PRE OUT** is an RCA jack that provides a line-level signal from the preamplifier stage. This provides a method for inserting an external signal processor into the signal chain prior to the amplifier stage, or branching off to another amplifier using a Y-cord. The signal at the PRE OUT is post-EQ and Master VOLUME control. The U-shaped jumper wire should remain installed between the PRE OUT and MAIN IN jacks for normal operation.
- 29 **MAIN IN** is an RCA jack that accepts a line-level signal. See PRE OUT above.

- 30 **AUX IN** are auxiliary inputs for connecting additional stereo line-level audio sources such as a cassette deck, CD player, AM/FM Tuner, etc. These are unbalanced stereo inputs that are combined internally into a monophonic signal. Note that only one stereo auxiliary input can be used at a time, as determined by the AUX switch on the front panel.
- 31 The **VOICE THR** control is used for adjusting the sensitivity of the INPUT 1 PRIORITY function. Use a small screwdriver to adjust the control. Turning clockwise increases the sensitivity, which means that the priority function is triggered with a less intense signal.
- 32 **INPUT 1 MIC/LINE** input is an XLR jack for connecting a balanced low impedance dynamic microphone (with MIC selected) or a balanced line-level signal (with LINE selected). This input is in parallel with the INPUT 1 IN terminals (16). Pin 1 is ground, pin 2 is signal high (+), and pin 3 is signal low (-).
- 33 The **MIC/LINE** switch is used to select the correct sensitivity for either a mic-level or line-level signal at INPUT 1.
- 34 The **PHANTOM 24V** switch supplies 24 VDC to pins 2 and 3 of INPUTS 2, 3, and 4 for microphones requiring phantom powering. An internal jumper is provided to disconnect the phantom power from Input 4 if desired.
- 35 **INPUTS 2, 3, and 4** are balanced XLR jacks for connecting dynamic or condenser microphones. Pin 1 is ground, pin 2 is signal high (+), and pin 3 is signal low (-).
- 36 The **H.P.** switch activates a high-pass filter on INPUTS 2-4, which attenuates frequencies below 300Hz at 12 dB/octave.
- 37 The **L.P.** switch activates a low-pass filter on INPUTS 2-4, which attenuates frequencies above 7kHz at 12 dB/octave.

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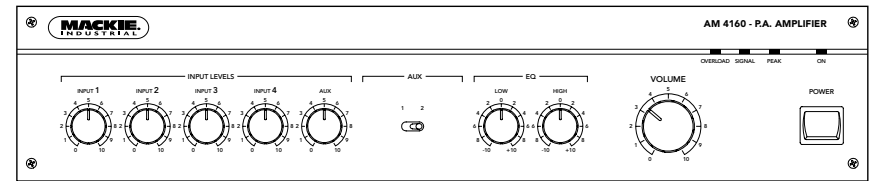
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**AM4000 Series**  
 Integrated Mixer/Amplifier

## Quick-Start Guide



The AM4000 Series Integrated Mixer/Amplifiers are designed for continuous duty in speech, music, paging, and sound reinforcement applications in churches, schools, offices, and other venues demanding high performance, flexible features, and rugged dependability.

Four XLR-type microphone inputs are actively balanced 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 and set to have priority over all inputs, which can be activated by either VOX, with an adjustable threshold, or a contact closure. Activation of either override provides 18 VDC (300mA) at a barrier connector on the rear panel to drive relays, and a separate terminal that may be used to drive LEDs. Two unbalanced, stereo Aux input connectors are internally summed to mono and selected by a switch on the front panel. Two unbalanced Tape 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 constant impedance and 25V, 50V, 70V, and 100V constant voltage. The smart output stage is fully protected against permanent damage caused by overloading, shorts, and extreme temperatures. The AM4000 Series operates on either 115VAC or 230 VAC, 50/60Hz, as determined by the Voltage Selector switch, and supplied by a detachable IEC power cord. Insulated terminals to connect a backup 24 VDC battery are provided on the rear panel. Switchover to DC is automatic.

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

Accessories include a rack mounting kit and an easily installed chime card.

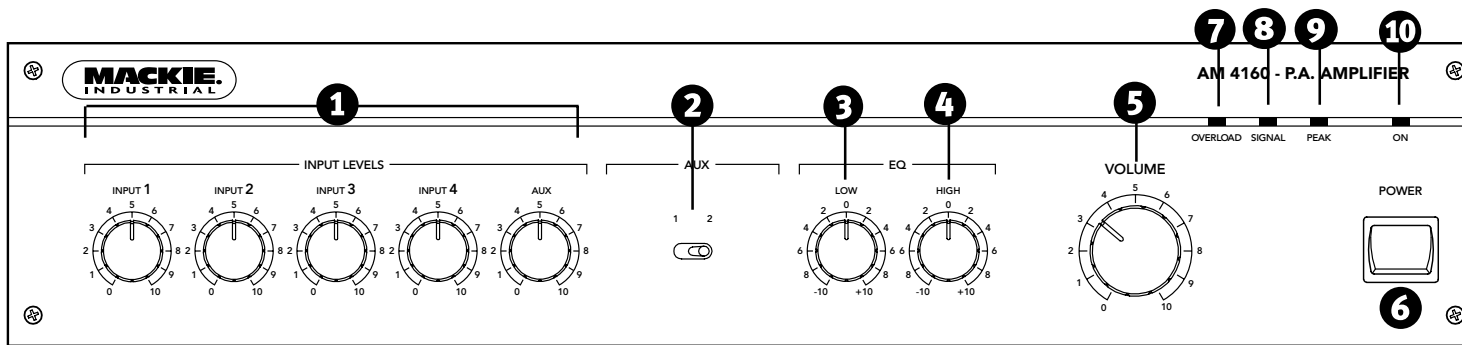
## Safety First!

**Before connecting and using the equipment, please read this Quick-Start Guide carefully and keep it for future reference.**

**WARNING!** This equipment has been designed to be installed by qualified professionals only! There are many factors to be considered when installing professional sound reinforcement systems, including mechanical and electrical considerations, as well as acoustic coverage and performance. Mackie Industrial strongly recommends that this equipment be installed only by a professional sound installer or contractor.

**CAUTION:** To avoid the risk of electric shock, never allow this equipment to be exposed to rain or dampness.

1. Never install, connect, or disconnect the unit with the power supply on.
2. Before powering up the AM4000 Series integrated amplifier, make sure the voltage selector switch on the rear panel corresponds to the AC voltage applied.
3. Make sure the safety ground on the power cord is properly grounded.
4. To prevent the risk of electric shock, never open the unit. There are no user-serviceable parts inside.
5. To ensure normal cooling of the AM4000 Series, make sure the unit is well-ventilated. Avoid exposure to direct sunlight or proximity to any heat source, dust, or dampness.
6. If installed in an equipment rack, provide at least one rack space between each integrated amplifier.



## Front Panel Features

- 1 **INPUT LEVELS** knobs are used to adjust the volume of the sound sources connected to INPUTS 1-4 and AUX IN. To prevent the levels from being modified, the knobs can be removed and the holes can be covered using the supplied inserts.
- 2 **AUX** selector is used to select the AUX IN signal that is routed to the output. Only one AUX IN can be selected at a time.
- 3 **LOW EQ** is a shelving filter that provides 12 dB of boost and cut below 100Hz.
- 4 **HIGH EQ** is a shelving filter that provides 12 dB of boost and cut above 10kHz.
- 5 **VOLUME** is a master volume control used to adjust the overall volume of the signal at the **POWER OUTPUTS**.
- 6 The **POWER** switch turns the AM4000 Series on and off.
- 7 The **OVERLOAD** indicator lights when the amplifier is operating in overload, a condition generally caused by a problem on the speaker line. When the amplifier is switched on, the **OVERLOAD** light comes on for a few seconds. This is normal and does not indicate a problem.
- 8 The **SIGNAL** indicator lights when a signal is present at the **POWER OUTPUTS**.
- 9 The **PEAK** indicator lights when the output signal is approaching clipping.
- 10 The **ON** indicator lights when the AM4000 is turned on and ready for operation.

## Rear Panel Features

- 11 **POWER INPUT** provides a means to connect an external 24 VDC power supply or battery as an alternative or backup power source. The AM4000 Series seamlessly switches to the backup supply if there's an AC power loss. When both AC power and 24 VDC power are connected, the DC power is switched off.
 

**Note:** The unit is not equipped with battery charging capabilities.
- 12 The **D.C. FUSE** protects the DC POWER INPUT circuit. Replace with the same type fuse only.
- 13 **POWER OUTPUTS** are screw-terminal connections for connecting speakers to the 4-ohm, 25V, 50V, 70V, or 100V outputs.
 

**WARNING:** To prevent the risk of electric shock, never touch the bare wires coming from the output terminals of the amplifier when it is switched on. When the connections have been made, insulate the output terminals of the amplifier using the protective cover provided.

### Constant-Impedance Output

The total impedance of the speakers and cable connected to the "4Ω" constant-impedance output should be 4 ohms. Connect the "4Ω" terminal to the "+" (HIGH) speaker terminal, and the "0" terminal to the "-" (LOW) speaker terminal.

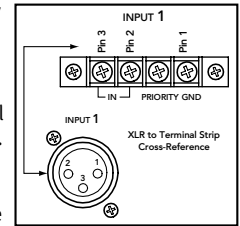
### Constant-Voltage Output

In a constant-voltage system, each speaker must be equipped with a line transformer having an input voltage equal to that of the speaker line (e.g., 25V, 50V, 70V, or 100V). Typically, these line transformers have selectable power taps (i.e., 2.5W, 5W, 10W) for connecting to the constant-voltage line. **CAUTION:** The sum of the wattage values of the speakers must not exceed the output power of the amplifier.

Connect the appropriate **POWER OUTPUT** voltage terminal to the "+" (HIGH) leg and the "0" terminal to the "-" (LOW) leg of the distributed speaker system.

- 14 The ground (≡) terminal is internally connected to the chassis and safety ground on the AC linecord.

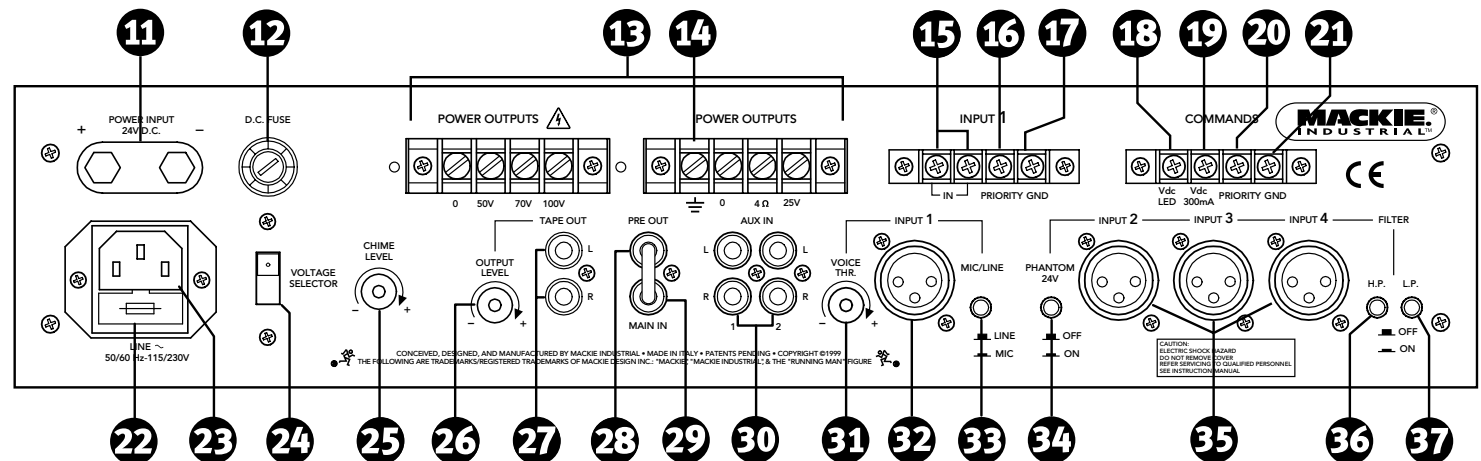
- 15 The **INPUT 1 IN** terminals are parallel with the **INPUT 1 XLR** connector and accept a balanced mic or line-level signal. **INPUT 1** has a priority function for paging purposes, and attenuates all other inputs when a signal is present at its input. Use the **VOICE THR.** control to adjust the threshold for the voice-activated circuit. Activation of the priority function can also be accomplished using the **INPUT 1 PRIORITY** terminal.



- 16 The **INPUT 1 PRIORITY** terminal activates the priority function for **INPUT 1** by using an external normally-open switch to short-circuit the **INPUT 1 PRIORITY** terminal to the **GND** terminal. When the **INPUT 1 PRIORITY** function is enabled, all other inputs are muted (no signal is transmitted to the outputs). An internal jumper changes the priority function so that the other inputs are attenuated rather than completely muted.

Enabling the **INPUT 1 PRIORITY** function also enables the **Vdc LED** and **Vdc 300mA** outputs on the **COMMANDS** terminal strip.

- 17 This **GND** terminal is the common connection point for **INPUT 1 IN** and **PRIORITY**.
- 18 The **Vdc LED** terminal is active when **INPUT 1 PRIORITY** or **COMMANDS PRIORITY** is enabled. This provides 18 VDC for driving an LED to indicate when the **INPUT 1 PRIORITY** has been activated.
- 19 The **Vdc 300mA** terminal is also active when **INPUT 1 PRIORITY** or **COMMANDS PRIORITY** is enabled. This provides 18 VDC with a maximum output capacity of 300mA for driving an auxiliary relay.



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**CAUTION:** ELECTRIC SHOCK HAZARD. REFER SERVICE TO QUALIFIED PERSONNEL. SEE INSTRUCTION MANUAL.