

17 The **STAND BY** terminal is used to turn on the amplifier with a remote switch.

Note: Standby mode must first be activated by moving a jumper (J1) on the input board (standby mode is disabled by default). See Figure 1 on back page.

When the **POWER** switch is turned on, the amplifier goes into standby mode. In this state, the amplifier is on but signal is not allowed to pass. Shorting the **STAND BY** terminal to the **GND** terminal with an external switch causes the amplifier to become fully operational.

18 The **STANDBY GND** terminal on the **COMMANDS** terminal strip is the common connection point for **STAND BY**.

19 The **OVERL. 300mA** terminal is active whenever the amplifier's overload protection circuit is activated. This provides 18 VDC with a maximum output capacity of 300mA for driving an auxiliary relay or indicating LED.

20 The **OVERL. GND** terminal on the **COMMANDS** terminal strip is the common connection point for **OVERL. 300mA**.

21 AC Protection Fuse protects the power supply and amplifier circuitry. Replace only with same type fuse.

22 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.

23 The **VOLTAGE SELECTOR** switch is used to select the AC supply voltage for the amplifier. Move switch so the AC line voltage used appears on the switch (**DOWN** for 115V, **UP** for 230V).

24 The **H.P.** switch activates a high-pass filter on **INPUTS 2-4**, which attenuates frequencies below 300Hz at 12 dB/octave.

25 The **L.P.** switch activates a low-pass filter on **INPUTS 2-4**, which attenuates frequencies above 7kHz at 12 dB/octave.

26 The **UNBALANCED IN** jack is an RCA-type connector that can be used instead of the **BALANCED IN**, or both can be used with the **PRIORITY** function, which gives the **BALANCED IN** priority over the **UNBALANCED IN**.

27 The **PARALLEL OUT** jack is an RCA-type connector that is in parallel with the **UNBALANCED IN** jack for connecting to the input of another power amplifier.

28 The **SENSITIVITY** switch adjusts the input sensitivity of the **UNBALANCED IN** from 0 dB (typical line-level signals) to -20 dB (for low-level signals).

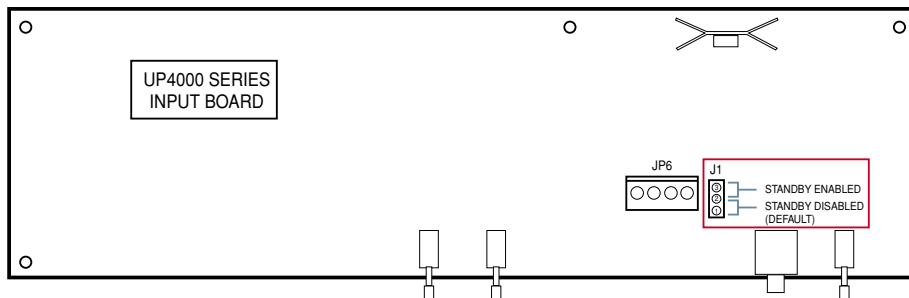


Fig. 1: UP4000 Standby Mode Jumper (J1)

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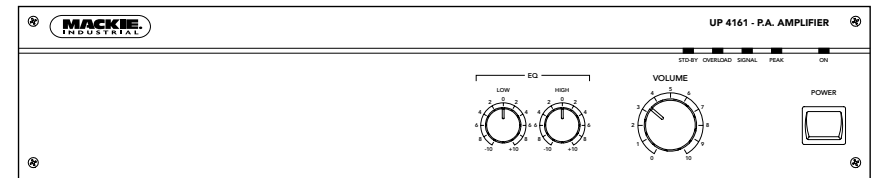
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UP4000 Series
Power Amplifier

Quick-Start Guide



The UP4000 Series Power 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.

Two discrete inputs with priority are provided. The main program input is actively balanced and terminated to a barrier strip connection on the rear panel. The second input is unbalanced and terminated to a single RCA connector. A contact closure will give priority to the balanced input by muting the unbalanced input. The unbalanced input features a parallel output and 0/-20 dB sensitivity switch.

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. Activation of the overload protection circuit turns on 18 VDC (300mA)

power at a barrier connector on the rear panel, which may be used to drive LEDs or relays. The UP4000 Series operates on either 115 VAC 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. A programmable stand-by mode allows the amplifier to be turned on remotely with a contact closure.

The front panel provides 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, stand-by mode, 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.

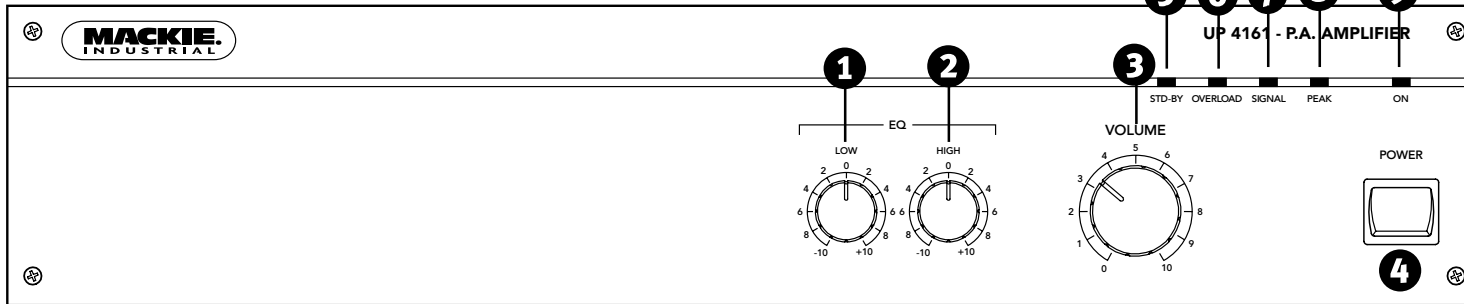
Safety First!

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 UP4000 Series 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 UP4000 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 **LOW EQ** is a shelving filter that provides 12 dB of boost and cut below 100Hz.
- 2 **HIGH EQ** is a shelving filter that provides 12 dB of boost and cut above 10kHz.
- 3 **VOLUME** is a master volume control used to adjust the overall volume of the signal at the POWER OUTPUTS.
- 4 Use the **POWER** switch to turn the UP4000 Series on and off.
- 5 The **STD-BY** indicator lights when the amplifier is in standby mode.
Note: Standby mode is disabled by default. An internal jumper (J1 on the input board) must be changed to enable standby mode. See Figure 1 on back page.
- 6 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.

When the OVERLOAD circuit is activated, the OVERL. 300mA output on the COMMANDS terminal strip is also activated.

- 7 The **SIGNAL** indicator lights when a signal is present at the POWER OUTPUTS.
- 8 The **PEAK** indicator lights when the output signal is approaching clipping.
- 9 The **ON** indicator lights when the AM4000 is turned on and ready for operation.

Rear Panel Features

- 10 **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 capability.

- 11 The **D.C. FUSE** protects the DC POWER INPUT circuit. Replace with the same type fuse only.
- 12 **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 all connections have been made, insulate the output terminals of the amplifier using the protective cover provided.

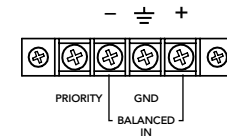
Constant-Impedance Output

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 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.

- 13 The ground (\equiv) terminal is internally connected to the chassis and safety ground on the AC linecord.
- 14 The **PRIORITY** terminal activates the priority function for the **BALANCED IN** by using an external normally-open switch to short-circuit the PRIORITY terminal to the GND (ground) terminal. When the PRIORITY function is enabled, the **UNBALANCED IN** is muted (no signal from the **UNBALANCED IN** is transmitted to the outputs).
- 15 The **GND** terminal is the common connection point for **BALANCED IN** and **PRIORITY**.
- 16 The **BALANCED IN** terminals are the main inputs for the amplifier and accept a balanced line-level signal (0 dBu nominal). Connect signal high (+) and low (-) as indicated below:



The **BALANCED IN** has a priority function, and attenuates the **UNBALANCED IN** when closing an external normally-open switch connected between the **PRIORITY** terminal to the **GND** (ground) terminal.

