

23 **REMOTE** is a 3-pin Phoenix-type connector for the optional wired remote control (SP-41R), which provides Input Select and Master Volume control.

24 **EXPANSION IN/OUT** consists of two parallel 25-pin D-Sub connectors for connecting multiple SP2400s together in a serial fashion. Any of the four program sources from any SP2400 can be used as the source for any of the zones in the system by assigning it to the expansion bus with the internal Bus Assign switches. This is a balanced bus for the four stereo input sources. In addition, the paging mic and paging control signal are also carried over the expansion bus.

25 **LOCAL/REMOTE** is a set of eight DIP switches used to select the input source for the channel between the local program input and the remote EXPANSION IN bus. Each program input has two switches, one to select the left signal source (odd-numbered switches) and one to select the right signal source (even-numbered switches).

26 **STEREO/MONO** switches configure each input source for either stereo or mono (zone) operation.

27 **PRE OUT** is an unbalanced RCA jack that provides a line-level signal from the preamplifier stage of the SP2400. This provides a method for inserting an external signal processor into the signal chain prior to the amplifier stage. The U-shaped jumper wire should remain installed between the PRE OUT and AMP IN jacks for normal operation.

28 **AMP IN** is an unbalanced RCA jack that accepts a line-level signal. See PRE OUT above.

29 **ZONE A/ZONE B OUTPUTS** are 2-pin Phoenix-type connectors that provide speaker-level signals. *The SP2400 is shipped with the outputs configured for 70 Volt operation (U.S. versions).* Internal jumpers are provided to configure the amplifier for 8-ohm, or 100 Volt systems.

30 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. Use replacement fuses only as indicated on the rear panel.

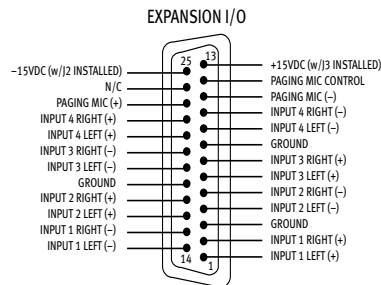
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Audio expansion connectors are provided on the rear panel for connecting multiple SP2400s, with shared audio via balanced busing. Each of the four program input signals can be independently assigned to the balanced bus with internal assign switches. The LOCAL/REMOTE switches on the rear panel are provided for selecting either local or bus operation for each input. The paging mic and paging control signal are also carried over the expansion bus.

A wired remote control is available that can select the input source and adjust the volume level for each zone. The remote control fits into a double-gang electrical box with a Decora®-style faceplate.

The RS485 port can interface with third-party control systems, or a PC-compatible computer loaded with the SPLinker software application for computer control of up to 32 zones in a system.

An internal option slot is provided on each of the two channels for installing an optional ambient noise sensing for the Program Inputs, using the optional ambient microphone. An RS232 port (COMM PORT) is provided on the front panel for connecting a Palm™ Handheld or PC computer for configuring the optional DSP card.



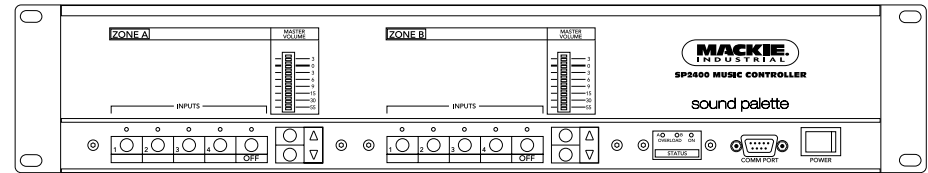
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MACKIE®
INDUSTRIAL™ **SP2400**
Dual-Channel Program Controller/Amplifier

Quick-Start Guide



The SP2400 is a microprocessor-based dual-channel music controller with two built-in power amplifiers designed for use in a variety of installations such as retail stores, restaurants, bars, and theme venues. It provides two outputs that can be used for either stereo operation or two-zone coverage. Four stereo line-level inputs are provided on the rear panel, along with a paging mic input and two local mic/line inputs.

The program input sources can be independently assigned to each zone with the Input Select switches on the front panel. Each of the four inputs can be operated in either stereo or mono mode, and has an integral AGC circuit to automatically compensate for level differences between the input sources. Input 1 has a buffered line-level output that may be used for music-on-hold or other external applications. Program Priority can be assigned to Input 4 for use with a jukebox or alternative paging configurations.

Each mic/line input has a 40 dB gain switch, variable gain trim, phantom power switch, and a two-band EQ. In addition, each zone has a variable VOX control for adjusting the trigger threshold of the paging mic's ducking circuit. The paging mic operates in both zones when voice-activated, but can be assigned to operate in either Zone A or Zone B, or in both Zones when manually operated with a switch connected to the PAGING MIC CONTROL connector.

Each zone is equipped with an input for an optional ambient microphone that can sample the ambient noise level in the room and adjust the paging mic gain in each zone to compensate for increased or decreased noise levels.

Internal jumpers are provided for configuring the amplifier outputs for 70V, 100V, or 8-ohm operation. ***The SP2400 ships configured for 70V operation (U.S. versions).***
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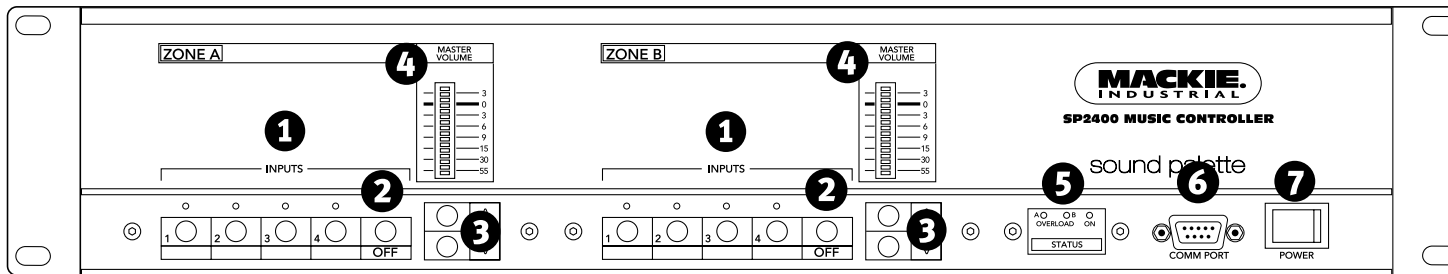
Safety First!

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 SP2400, make sure the AC voltage applied corresponds to the markings on the rear panel.
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 SP2400, 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 SP2400, and install a fan in the rack if three or more SP2400s are mounted in a single rack.



Front Panel Features

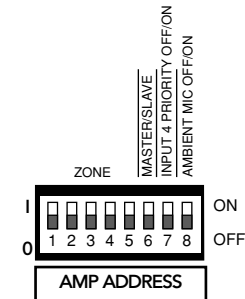
- ❶ **INPUTS** are used to choose the program source for its respective zone. Only one source may be selected at a time.
- ❷ **INPUT OFF** deselects Inputs 1-4 and activates the MIC/LINE INPUT ❸.
- ❸ **MASTER VOLUME** is used to adjust the overall volume level for Inputs 1-4, and for the MIC/LINE INPUT.
- ❹ The **Meter** indicates the level at the PRE OUT jack. Normally, it operates as a Peak Program Meter (PPM). When adjusting the MASTER VOLUME level, the meter changes to a level-setting meter and indicates the relative gain setting. It reverts back to PPM operation after a few seconds.
- ❺ There are three **STATUS** indicators. The OVERLOAD LED indicates when one of the amplifiers is beginning to current limit. The ON LED indicates when the SP2400 is operating.
- ❻ Use the **COMM PORT** to configure the optional DSP card.
- ❼ Use the **POWER** switch to turn the SP2400 on and off.

- ❽ **DIRECT OUTPUT** is a buffered line-level output providing the stereo signal from the program source connected to INPUT 1.
- ❿ **PAGING MIC** is the connection for the paging microphone. There are two connectors available: a 3-pin XLR and a 3-pin Phoenix-type connector. In both cases, pin 1 is ground, pin 2 is signal high (+), and pin 3 is signal low (-).
- ⓫ **CONTROL** is a Phoenix-type connector for connecting external normally-open switches for remote paging. Three options are available: Page to Zone A, Page to Zone B, and Page to both Zones (ALL CALL). Connect the switches between GROUND and the option of choice.
- ⓬ **PHANTOM** applies phantom power (+24VDC) to pins 2 and 3 of the microphone input.
- ⓭ The **GAIN +40 dB** DIP switch is used to set the gain for use with either a mic-level (+40 dB position) or a line-level signal.
- ⓮ The **GAIN** variable control is used to trim the mic preamp gain for the best signal-to-noise ratio.

- ⓯ The **LOW** variable control is a shelving filter that provides 12 dB of boost and cut below 100Hz.
- ⓰ The **HIGH** variable control is a shelving filter that provides 12 dB of boost and cut above 12kHz.
- ⓱ The **PAGING MIC VOX** variable control adjusts the ducking threshold for the paging mic. Rotate the control clockwise to reduce the threshold. Rotate the control counterclockwise to increase the threshold.
- ⓲ The **MIC/LINE INPUT** is provided to connect a local microphone in each zone. This is a 3-pin Phoenix-type connector where pin 1 is ground, pin 2 is signal high (+), and pin 3 is signal low (-).
- ⓳ **AMBIENT MIC** is a 3-pin Phoenix-type connector used to connect the optional MT-3100 ambient microphone, one for each zone.
- ⓴ **EQ** is a 3-band equalizer with a sweepable midrange that only affects Inputs 1-4. LOW is a shelving filter that provides 15 dB of boost and cut below 80Hz. MID is a peaking filter that provides 15 dB of boost and cut at the selected frequency between

250Hz and 8kHz. HIGH is a shelving filter that provides 15 dB of boost and cut above 12kHz.

- ⓵ **AMP ADDRESS** is used to assign a unique address to each amplifier, as well as to enable or disable features. Switches 1-5 provide 32 separate addresses, switch 6 determines Master/Slave status, switch 7 enables Input 4 Priority, and switch 8 enables the optional ambient mic.

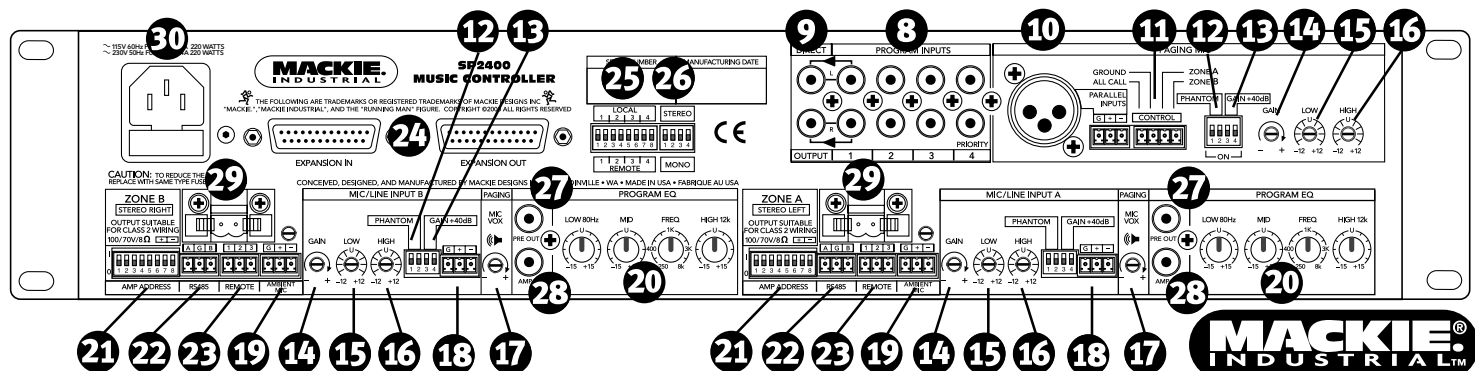


- ⓶ **RS485** is a 3-pin Phoenix-type connector that provides an interface for the SPLinker Sound Palette Control PC application software for centralized computer control for up to 32 zones. The RS485 bus is internally connected between the two amplifiers, so if both amplifiers are assigned the same zone with the AMP ADDRESS switches, the front panel controls and remote controls operate both sides.

Additionally, it allows interfacing to third-party control systems. Pin 1 is the non-inverting Input/Output, pin 2 is ground, and pin 3 is the inverting Input/Output.

Rear Panel Features

- ❸ **PROGRAM INPUTS** are stereo RCA unbalanced inputs that accept line-level signals.



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