



RDL[®]
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

max **TX™ SERIES**
Model TX-PA40D
40 W Stereo Audio Power Amplifier
with Power Supply

- Stereo Audio Power Amplifier
- 20 W RMS / Channel into 8 Ω – 40 Watts Total
- 15 W RMS / Channel into 4 Ω – 30 Watts Total
- Left and Right Unbalanced Phono Jack Inputs
- Switch-Selectable Stereo or Mono Operation
- Compressor/Limiter Controls Clipping
- Studio Quality, Aurally Transparent Compressor/Limiter
- Compressor Produces Maximized Average Output Power
- Compression Enabled Using Input Level Adjustments
- LED to Indicate Audio Compression Threshold
- Outputs Drive 4 or 8 Ohm Speakers
- High-Efficiency Class D Operation
- Thermal and Short-Circuit Protection



TYPICAL APPLICATIONS:

- ▶ Projector-Mounted Amplification
- ▶ Boardrooms
- ▶ Classrooms
- ▶ Restaurant or Residential Patios
- ▶ Audio / Visual Carts
- ▶ Video Conferencing
- ▶ Localized Stereo Sound

The TX-PA40D is a utility power amplifier in the convenient line of Max-TX products. Max-TX modules are the large format members of the RDL TX family, featuring the superior engineering and components common to RDL products. The durable adhesives provided with the TX-PA40D permit permanent or removable mounting. The TX-PA40D may be rack or surface mounted with optional TX series accessories. The TX-PA40D gives you the advantages of a quality, high efficiency stereo audio power amplifier with the added convenience of TXs!

APPLICATION: The TX-PA40D is the ideal choice in many applications where a high quality, high-efficiency utility amplifier is needed to drive a pair of 4 Ω or 8 Ω speakers. It is specifically suited to fixed-gain amplification applications where gain is controlled by other equipment. Examples include projectors with variable audio outputs used in classrooms, boardrooms and video conferencing.

The TX-PA40D features two unbalanced line level inputs on high-reliability gold plated phono (RCA) jacks. A front-panel recessed gain control trimmer permits setting the desired amplifier output level for each channel. The gain range accommodates the range of typical unbalanced audio signal levels. Each of the two TX-PA40D outputs will drive a 4 Ω or 8 Ω speaker or multiple speakers connected to present a 4 Ω or 8 Ω load to the amplifier. The output impedance is switch-selectable on the front panel of the module.

A front-panel switch is provided to sum the audio inputs to mono. In the **STEREO** mode, the TX-PA40D independently amplifies each audio channel, left (L) and right (R). If speaker placement in the specified installation is incompatible with stereophonic amplification, the **INPUT MODE** switch may be set to **SUMMED MONO**.

The TX-PA40D includes a stereo analog compressor/limiter for audio fidelity noticeably superior to conventional class D amplifiers with digital limiting. The input **GAIN** settings determine whether the limiter alone is used for clipping suppression, or if the full compressor/limiter will be used to substantially increase the average output power beyond that of a standard 40 W amplifier. A red front-panel LED flashes when the limiter is preventing output clipping. Normal audio level signals remain unaffected by the compressor thereby preserving audio dynamics. If the input level is increased so the compressor is active, the LED remains dimly lit between peak flashes. The audio is compressed according to three dynamic time constants providing aural transparency while maintaining clean, unclipped amplified audio for input overloads of up to 20 dB. The TX-PA40D, with compression, is capable of producing average audio output levels and clarity normally expected from stereo amplifiers with a much higher output power rating.

A blue **POWER** LED illuminates when the TX-PA40D is powered from its external 24 Vdc power supply (included). The module is equipped with both thermal and output short-circuit protection. The high-efficiency Class D output stages produce minimal heat for all levels of expected voice or music modulation. Continuous full-power operation with audio tones will not damage the amplifier, but is not recommended.

Wherever an ultra-compact, high quality, high efficiency audio power amplifier is needed to provide reliability and unsurpassed versatility, the TX-PA40D is the ideal choice. Use the TX-PA40D individually, or combine it with other RDL products as part of a complete audio/video system.



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MX™ SERIES

Model TX-PA40D

40 W Stereo Audio Power Amplifier with Power Supply

Installation/Operation



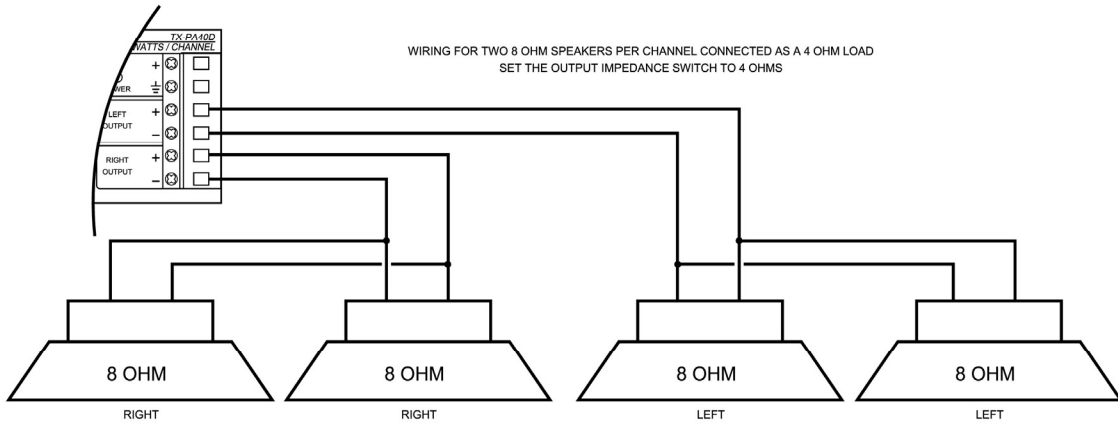
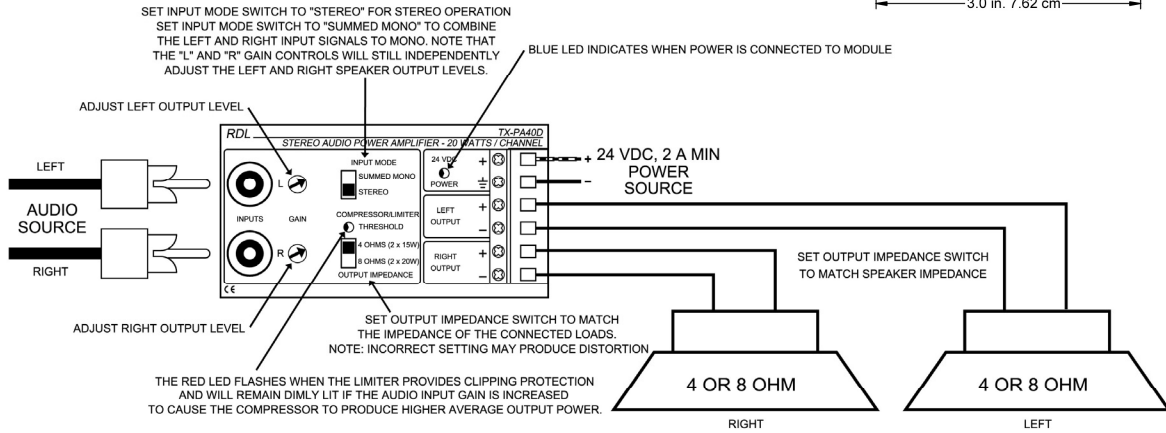
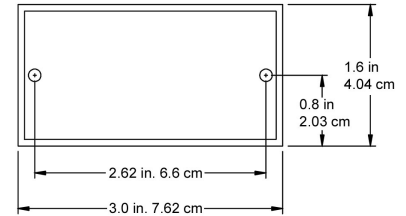
EN55103-1 E1-E5; EN55103-2 E1-E4
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.

Mounting

The TX-PA40D should be mounted in a location with good ventilation. If the module is mounted using a box that does not provide ventilation, the amplifier should be secured to the outside surface of the box using the two mounting screws provided. The spacing between the mounting screws is 2.62 in. (6.6 cm); the recommended hole diameter is 0.187 in. (.475 cm). The ambient operating environment must not exceed 40 degrees C.

Connection and Adjustment

1. Set the GAIN controls fully counter-clockwise.
2. Connect the audio inputs, speakers and 24 Vdc (2 A minimum) power supply.
3. Set the OUTPUT IMPEDANCE switch (4 or 8 Ohms) corresponding to the speaker load.
4. For overshoot protection only, adjust the two GAIN controls for the desired audio level with the THRESHOLD LED flashing only occasionally on audio peaks.
5. For maximum audio output level with compression, increase the two GAIN controls for the desired audio level with the THRESHOLD LED lit dimly between peak flashes.
6. If summed mono operation is desired, set the INPUT MODE switch to SUMMED MONO.



TYPICAL PERFORMANCE

Inputs (2):
Input Impedance:
Gain Adjustments (2):
Minimum Input Levels:
Maximum Input Levels:
Frequency Response:
THD+N:
Compressor:
Noise:
Selectors:
Output Power:
Output Circuit:
Ambient Operating Environment:
Indicators (2):
Power Supply (included):

Line level (-10 dBV nominal unbalanced), Left and Right
10 kΩ unbalanced
Single turn, one per channel
-18 dBV (to cross compressor threshold)
+15 dBV
20 Hz to 20 kHz (+/- 1 dB, 4 or 8 Ohms)*
< 0.1% (1 kHz, 1 W, 4 or 8 Ohms); < 1% (50 Hz to 20 kHz)*
*measured at compressor threshold level equaling 12 W RMS (8 Ohms) output power
Threshold nominally 2 dB below rated output, automatically adjusting attack and release times
Better than 60 dB (1 kHz, no compression)
< -75 dB (below 20 W RMS)
Slide switches: Output Impedance 4 Ohms or 8 Ohms; Input Mode **SUMMED MONO** or **STEREO**
20 W RMS into 8 Ω per channel, 40 W RMS total; 15 W RMS into 4 Ω per channel, 30 W RMS total
Class D
0° C to 40° C Maximum; 20° C Recommended
Red LED: **THRESHOLD** LED indicates compressor activity
Blue LED: **POWER** on
100 to 240 Vac, 50-60 Hz, 1.5A; 24 Vdc output to module

Models
TX-PA40D includes:
Amplifier, Power Supply, North American Power Cord
TX-PA40DE includes:
Amplifier, Power Supply (without Power Cord)

Radio Design Labs Technical Support Centers
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