



RDL[®]
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

FLAT-PAK™ SERIES Model FP-PA35A 35 W Audio Power Amplifier with Power Supply



- 35 Watts RMS Constant Voltage Amplifier
- 25 V, 70 V or 100 V Output
- Plenum Rated per UL 2043 Standard
- Automatic Energy-Saving Sleep Mode
- Selectable Sleep Delay: Off, 5, 15, 25 Minutes
- Input / Output Terminal Block Connections
- Line Level Balanced or Unbalanced Input
- Compressor/Limiter Controls Clipping
- LED to Indicate Audio Compression Threshold
- Compressor Produces Maximized Average Output Power
- Audio Quality Superior to Standard Amplifiers
- Ultra-compact All Metal Construction
- High-Efficiency Class D Operation
- Thermal and Short-Circuit Protection

The FP-PA35A is part of the group of versatile FLAT-PAK products from Radio Design Labs. The unique FLAT-PAK case can be directly screwed or bolted to cabinets or shelves. Optionally available rack-mounting accessories permit single or multiple FLAT-PAK module mounting.

APPLICATION: The FP-PA35A is the ideal choice in many applications where multiple 25 V, 70 V or 100 V speakers in a zone need to be powered from a single audio power amplifier.

The FP-PA35A features a balanced line level input that may be connected unbalanced. A front panel gain control is designed to be adjusted manually or with a trimming screwdriver. The gain range will accommodate standard unbalanced levels as well as professional balanced levels. Multiple distributed sound system speakers connect to the corresponding 25 V, 70 V or 100 V amplified output.

The FP-PA35A includes an analog compressor/limiter for audio fidelity audibly superior to conventional class D amplifiers with digital limiting. The input **GAIN** setting determines 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 35 W amplifier. A red **COMPRESSION** 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 that 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 FP-PA35A, with compression, is capable of producing average audio output levels and clarity normally expected from amplifiers with a much higher output power rating.

The FP-PA35A circuits are all designed for low power consumption. In the absence of an audio input, a digital timer is enabled to switch the class D output stage off. When this sleep mode is active, the amplifier module and its included RDL power supply consume less than 1 W of mains power. A front-panel control sets the sleep mode delay timer to 5, 15 or 25 minutes. The control also permits the installer to bypass the sleep mode to conform to system specifications that require the amplifier to be active at all times. Upon detection of an input signal, the amplifier is nearly inaudibly and instantly restored to full operation within 150 milliseconds.

A blue **POWER** LED illuminates when the FP-PA35A is powered from its external 24 Vdc power supply. The power LED is dimly illuminated when the sleep mode disables the amplifier and glows brightly when the amplifier operation is fully enabled. The module is equipped with both thermal and output short-circuit protection. The high-efficiency Class D output stage produces 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 eco-friendly audio power amplifier is needed to provide reliability and unsurpassed versatility, the FP-PA35A is the ideal choice. Use the FP-PA35A individually, or combine it with other RDL products as part of a complete audio/video system.

FLAT-PAK™ SERIES

Model FP-PA35A

35 W Audio Power Amplifier with Power Supply

Installation/Operation

Declaration of Conformity available from rdlnet.com.
Sole EMC specifications provided on product package.
Specifications are subject to change without notice.

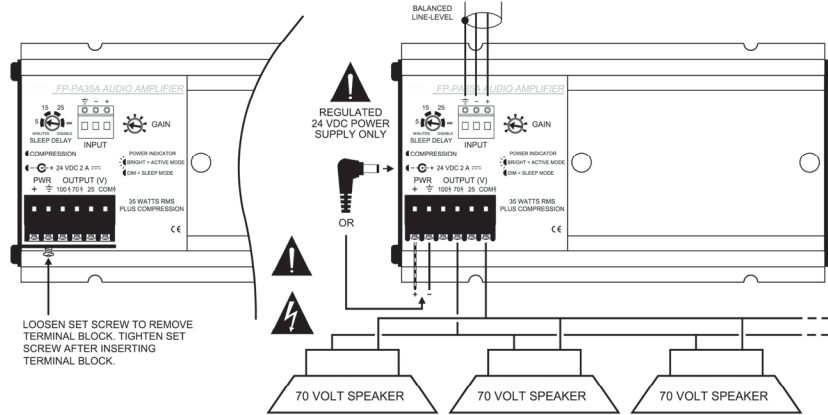
Mounting

The FP-PA35A 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. The ambient operating environment must not exceed 40 degrees C.

USE ONLY THE POWER SUPPLY SUPPLIED WITH THE MODULE.

USE ONLY THE TERMINAL BLOCK SUPPLIED WITH THE MODULE.

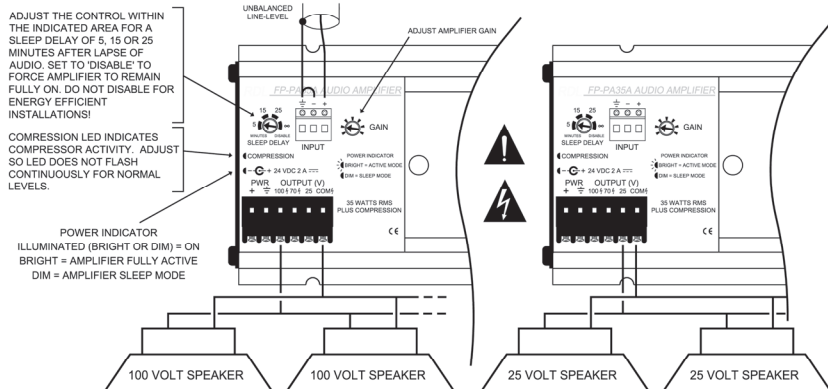
OUTPUT CONNECTIONS MUST BE MADE BY PERSONS ADVISED OR SUPERVISED TO AVOID DANGERS AND PREVENT RISKS WHICH ELECTRICITY MAY CREATE.



LOOSEN SET SCREW TO REMOVE TERMINAL BLOCK. TIGHTEN SET SCREW AFTER INSERTING TERMINAL BLOCK.

Sleep Mode is automatic after the sleep delay time has elapsed following absence of input audio.

Sleep Mode may be activated manually by repowering the module with input audio absent.



ADJUST THE CONTROL WITHIN THE INDICATED AREA FOR A SLEEP DELAY OF 5, 15 OR 25 MINUTES AFTER LAPSE OF AUDIO. SET TO 'DISABLE' TO FORCE AMPLIFIER TO REMAIN FULLY ON. DO NOT DISABLE FOR ENERGY EFFICIENT INSTALLATIONS!

COMPRESSION LED INDICATES COMPRESSOR ACTIVITY. ADJUST SO LED DOES NOT FLASH CONTINUOUSLY FOR NORMAL LEVELS.

POWER INDICATOR ILLUMINATED (BRIGHT OR DIM) = ON BRIGHT = AMPLIFIER FULLY ACTIVE DIM = AMPLIFIER SLEEP MODE

TYPICAL PERFORMANCE

| | |
|--------------------------------|---|
| Input: | Line level (+4 dBu nominal balanced) (-10 dBV nominal unbalanced) |
| Input Impedance: | 20 kΩ balanced bridging 10 kΩ unbalanced |
| Input / Output Connectors: | Detachable terminal block |
| Gain Adjustment: | Single turn audio taper |
| Minimum Input Levels: | Balanced:.....-14 dBu (to cross compressor threshold) Unbalanced:-15 dBV (to cross compressor threshold) |
| Maximum Input Levels: | Balanced:.....+22 dBu Unbalanced:+20 dBV |
| Frequency Response: | 50 Hz to 20 kHz (+/- 3 dB)* *measured at compressor threshold level equaling 22 W RMS output power |
| THD+N: | < 0.5% (@ 1 kHz)* < 0.5% (50 Hz to 20 kHz, 1 W) |
| Compressor: | Threshold 2 dB below rated output, automatic adjusting attack and release times |
| Noise: | <-75 dB (below 35 W RMS) |
| CMRR: | > 60 dB (50 Hz to 120 Hz) |
| Output Power: | 35 W RMS @ 25 V, 70 V or 100 V |
| Sleep Mode Power Consumption: | < 1 W (amplifier and included power supply) |
| Sleep Mode Delay: | 5, 15 or 25 minutes (selectable) |
| Sleep Mode Disable: | Selectable |
| Active Mode Delay: | < 150 ms after input audio detected |
| Audio Detector Threshold: | -50 dBu balanced, -52 dBV unbalanced |
| Ambient Operating Environment: | 0° C to 40° C Maximum; 20° C Recommended |
| Indicators (2): | Red LED: PEAK LED indicates compressor activity Blue LED: Power ON, Dim: Sleep mode active; Bright: Amplifier active |
| Power Supply (included): | 100 to 240 Vac, 50-60 Hz, 2A; 24 Vdc output to module, Ground-referenced |
| Plenum Rating Standard: | UL 2043 |
| Dimensions: | Height: 2.80 in.(7.1 cm); Width: 3.25 in.(8.26 cm); Length: 6.04 in.(15.3 cm) |

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rule. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Radio Design Labs Technical Support Centers

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