

IPA 424 T

4-CHANNEL DSP INSTALLATION AMPLIFIER 4 X 240 W @ 4 OHM / 70 V / 100 V

LDsystems **LD**

FEATURES

- Professional 4-channel installation amplifier
- Powerful class D power amplifier with 4 x 240 W (IPA 424 T) or 4 x 120 W (IPA 412 T) at 4 Ohm (transformer bypass) or 70 V/100 V outputs through toroidal core transformer
- Stereo/parallel/bridge mode selector switch per channel pair
- 4 balanced line inputs and 4 speaker outputs with terminal block connections
- User-friendly front panel with signal, limit, protection, mute and bridge mode LEDs per channel and clipping LEDs for the inputs
- Speaker protection circuits: DSP limiter, overcurrent, direct current, overheating, short circuit as well as switchable auto standby mode
- DSP presets with HPF and LPF which can be activated via DIP switches
- REMOTE audio and control bus based on CAN architecture (Controller Area Network)
- Equipped for future LD Systems remote control panels and paging microphones
- Slot for future optional expansion cards for Ethernet or Ethernet + Dante
- Optional accessories: 19" L-bearing rails, length 450 mm

DESCRIPTION

Good sound belongs everywhere – in the hotel lobby, in conference rooms, in schools and houses of worship. Demands are constantly increasing, not only in terms of quality, but also in terms of flexibility. Permanently installed and still flexible? This apparent contradiction can be resolved by the IPA Series DSP-based installation amplifiers.

The IPA 424 T is a professional, four-channel installation power amplifier with 4 x 240 watts. While the 70 V/100 V outputs are equipped with high quality toroidal core transformers, the low impedance 4-Ohm outputs are completely transformerless and guarantee the highest possible audio quality. The DSP functions include, amongst others, a parametric EQ with matching speaker library, dynamic tools, a matrix mixer, priority source selection and delay.

Despite this range of functions, the IPA Series power amps are easy to operate. Important functions such as signal, limit, protection and bridge mode are easily visible via the LEDs on the front panel.

HPF/LPF presets can be enabled directly on the device via DIP switches. The IPA 424 T is already prepared for remote control using future remote panels and paging microphones from LD Systems. The back-panel slot provides expansion card connectivity for additional future-proofing. The Ethernet card offers comprehensive configurability and management via software. The Ethernet+Dante card also offers Dante audio networking capabilities and connection to a wide range of Dante-enabled devices, in order to integrate the IPA 424 T into the Dante network and resolve more complex tasks.

Times are changing; rooms are redivided or rededicated, numbers of attendees increase or decrease based on unforeseen events, but with the IPA Series DSP-supported power amps, your installation is prepared for any situation. Scalability and future-proofing are the biggest advantages of the IPA Series. Its energy efficiency is also ideal thanks to the class-D technology and switchable auto standby.

The IPA 412 T variant with 4 x 120 watts is available for smaller installations.



SPECIFICATIONS

Pased on „CURV 500 iAMP“

Product number	LDIPA424T
General	
Product type	Amplifier
Type	Installation power amplifier
General data	
Audio Channels	4
Output Circuitry	Class D
Operating voltage	Wide Range SMPS with PFC (power factor control)
Mains connector	IEC socket
Auto-Standby Power	Yes. Switchable (On-Off)
Time to Auto-standby	20 Min with no audio input signal
DSP	Yes
Remote-Bus	Yes
Indicators	Front Panel: „PROT“, „LIMIT“, „SIG“, „BRIDGE“ and Mute Symbol LED 's. Power On/ Standby LED, Rear Panel: 4 x Input Clip LED 's, Remote Lock LED (Red)
Front panel controls	On / off switch, standby
Rear panel controls	„BRG“ (Bridge), „PAR“ (Parallel), „ST“ (Stereo), Amplifier Channel Mode, Low-Z and High-Z switches (paired), Output Volume potentiometers, Preset A and B switches, Remote Lock, Remote ON/OFF, Remote-Mode, Standby On/Off
Inputs	4 x Balanced Line Inputs, Remote Bus Audio Input
Input connectors	6-pin Terminal Block Pitch 3.5 mm, Remote IN/OUT RJ45, Service connection Micro USB type B
Expansion Slot	For optional Ethernet, or Ethernet + Dante cards
Cooling	Front to rear/side airflow, Passive + 2-zone temperature controlled active cooling
Operating voltage	100 V AC - 240 V AC / 50 - 60 Hz
Fuse	T10AL 250 V
Inrush Current Power OFF-Standby	2.8 A
Inrush Current Standby-ON	0.5 A

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Product number	LDIPA424T
Standby power consumption	0.9 W
Power Consumption @ idle mode	30 W
Power Consumption @ full load	1000 W
Operating temperature	0 °C – 40 °C; (max 60% relative humidity)
Width	483 mm
Height	44.5 mm
Depth	425 mm
Optional accessories	19" L mounting rails (AH - 876TL)
Weight	11.36 kg

Amplifier Output Specifications, all outputs driven and loaded

Rated output power (1 kHz @ 16 Ohms)	4 x 60 W (1.5 Seconds Sine Burst)
Rated output power (1 kHz @ 4 Ohms)	4 x 240 W (1.5 seconds sine burst)
Rated output power (1 kHz @ 8 Ohms)	4 x 120 W (1.5 Seconds Sine Burst)

Product number	LDIPA424T
Rated output power (1 kHz @ 8 Ohms, bridged)	2 x 490 W (1.5 Seconds Sine Burst)
Minimum load impedance per channel	4 ohms Single-Ended, 8 ohms Bridge

Performance specifications

Nominal input sensitivity	+5 dBu (Sine 1 kHz, Gain max)
Protection circuits	Audio Limiter, DC, HF Protect, HPF (High-Z), Short circuit, temperature, thermal overload
Frequency response	18 Hz – 22 kHz (Low-Z OUT, -3 dB), 50 Hz – 23 kHz (High-Z OUT, -3 dB)

Digital Specifications

System Latency	6.2 ms
AD/DA converter resolution	24 Bit
AD/DA converter sampling rate	48 kHz
THD + N	< 0.03 % (Low-Z SPK OUT, +18 dBu, 20 Hz – 20 kHz)

ARCHITECT & ENGINEER'S SPECIFICATIONS

The amplifier shall provide four independent channels of amplification with DSP processing capabilities. Each channel shall provide a rated output power, at 1 kHz with less than 0.5% THD, of 240 W into 4 Ohms or into 70 V/100 V constant voltage lines. The amplifier shall be capable of working in bridge mode, providing 2 channels at a rated output power of 480 W into 8 Ohms. The output circuit topology shall be Class-D.

The amplifier shall include an output DSP limiter and protection circuits against short circuit, thermal overload, DC, and overcurrent. It shall be equipped with a low-noise temperature-controlled fan for passive and active cooling. The amplifier shall be capable of continuous operation in ambient temperatures up to 40°C.

The power amplifier shall have four balanced analog inputs with 6-pin terminal block connectors per pair of inputs, and four amplified outputs with terminal block connectors. Additionally, the amplifier shall feature a Remote audio and control bus based on CAN architecture, with RJ45 connectors for Remote IN/OUT and a Micro USB Type-B port for service.

The amplifier shall include digital signal processing (DSP), with high-pass filter (HPF) and low-pass filter (LPF) presets that can be activated via DIP switches. An optional card shall offer access to full DSP capabilities including input processing gain, compressor, mute, level, mix matrix, priority ducker and output processing with PEQs, delay, polarity, mute, and a loudspeaker preset selection with more PEQs and a dynamic section with RMS and dual-band peak limiter. This is all configurable using free downloadable software, which also allows the creation of custom user panels and advanced configurations using the scene manager and logic modules.

The front panel of the amplifier shall contain LEDs indicating signal, limit, protection, mute, and bridge mode per channel, along with clipping LEDs for the inputs in the rear side. Rear panel controls shall include switches for Bridge (BRG), Parallel (PAR), Stereo (ST) modes, output volume potentiometers, and switches for Low-Z and High Z operation.

The amplifier shall include a LOCK function, available on a DIP-switch block located in the rear panel, which disables all physical control elements on both the front and rear panels, including the front-panel standby button. When enabled, users shall be unable to adjust settings or place the unit into standby, while power-on operation shall remain possible. This function shall allow installers to secure all configured parameters and prevent unintended modifications.

The amplifier shall be powered by a highly efficient switch mode power supply with power factor correction (PFC), providing an operating range from 100 to 240 VAC, 50 – 60 Hz. It shall have a standard IEC C14 connector in the rear panel and shall be supplied with a removable power supply cord. The amplifier shall draw 30 W or less in idle mode and up to 1000 W at full load. The standby power consumption shall be 0.9 W, with a time to auto standby of 20 minutes with no audio input signal.

The amplifier shall include an expansion slot for optional Ethernet or Ethernet + Dante cards. Optional accessories shall include 19" L-bearing rails, length 450 mm. The dimensions of the amplifier shall be 1RU (44.5 mm) height, 483 mm width, and 425 mm depth. The amplifier shall weigh 11.36 kg.

The amplifier shall be in conformity with the EU directives 2014/35/EU (LVD), 2014/30/EU (EMC), and 2011/65/EU (RoHS).

The four-channel DSP amplifier shall be the LD Systems IPA 424 T.

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TECHNICAL DRAWING

Scale 1 : 5

