

PA-138 *Linear Power Amplifier*



State of the art linear technology brings quiet, direct coupled capability to vibration and acoustic test systems.

GENERAL DESCRIPTION

The Labworks PA-138 Linear Power Amplifier is a high quality, air-cooled, direct-coupled audio amplifier primarily intended for use with small vibration systems. Although this amplifier has been designed to directly drive low impedance loads, it can be used in any application requiring continuous duty high quality audio power.

PA-138 Amplifiers feature protection from both over current and over temperature insuring long term reliability. The

amplifier has full interlock capabilities as well as peak voltage and RMS current bar graphs to monitor output.

Two operational modes are incorporated in the design. These amplifiers can be used as either a wide-band, highly damped voltage source, or as a high impedance current source. DC and AC coupled signal inputs are provided. PA-138 Amplifiers are designed for standard 19 in. rack mounted installation and require 100, 120, 220 or 240V, 48 to 60 Hz power.

FEATURES

- Linear output stage provides low noise and distortion.
- Automatic over temperature and over current protection.
- Direct coupled input and output allows DC operation.
- Two operational modes, voltage or current source.
- External interlock circuitry.

Labworks Inc.



PA-138 SPECIFICATIONS*

Output Voltage (continuous)

10 Hz to 20 KHz	
open circuit	31.0 V rms
4Ω load	26.0
2Ω load	23.5
1Ω load	20.0
DC to .1 Hz	
open circuit	45.0 Vdc/pk
4Ω load	36.5
2Ω load	22.0
1Ω load	11.0

Random Voltage Output

2.5 sigma peak volts	
open circuit	18.0 V rms
4Ω load	16.0
2Ω load	15.0
1Ω load	14.0
3.0 sigma peak volts	
open circuit	15.0 V rms
4Ω load	13.0
2Ω load	12.5
1Ω load	11.5

Maximum continuous dissipation

Ambient Temp =	40°C	400W
	50	200
	60	0

Frequency response (DC coupled input)

DC to 10 KHz	-0.6 dB
DC to 20 KHz	-2.5
AC coupling @ 1.0 Hz	-0.5

Slew rate

	2 V/μsec
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Harmonic distortion

(10V, DC-10k)	<0.65% @ 1Ω
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Signal/noise ratio

(ref 20V out)	100 dB minimum
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Input impedance

DC coupled	10 kΩ
AC coupled	47 uF in series with 10 kΩ

DC offset

	5 mV max
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Voltage mode gain

	48 (34 dB) max
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Current mode gain

	22 Amps/Volt max
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Voltage source regulation

	<0.1 dB (∞- 1Ω load, 30 Hz/10 V rms)
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Current source regulation

	<0.1 dB (0-2Ω load, 30 Hz/10 A rms)
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Front panel controls

	Power, mode switches, gain adjust
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Front panel indicators

	Internal power, interlock trip
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Front panel metering

Type	(2) 19 seg. horiz. bar graphs
Scale	
Voltage	0-40V pk
Current	0-16 A rms

Resolution

Peak voltage	5% of full scale
True rms current	5% of full scale
Accuracy (voltage & current)	±5% absolute

Interlock circuit

Type	<1 Vdc= fault or N.C. switch
Response time	3 ms. max
Action	Output drives to ground
Reset	Gain pot full down or > 1.5V @ RST
Indicator	Flashing front panel "Trip" light

Cooling

2-speed fans	
Noise level: low/high speed	<45 dB/<55 dB (switches @ approx. 1/2 diss.)
	Over current, over temperature

Self protection

Line protection

Dual line fuses	(10A @ 100, 120 Vac) (5A @ 220, 240 Vac)
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Input power

Voltage	1,000 VA max
Frequency	100, 120, 220 or 240 Vac
	48 to 62 Hz

Dimensions

	3.5" H x 19" W x 13" D
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Weight

	24 lbs
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*Specifications subject to change. Consult factory for latest specifications.

PERFORMANCE GRAPHS

