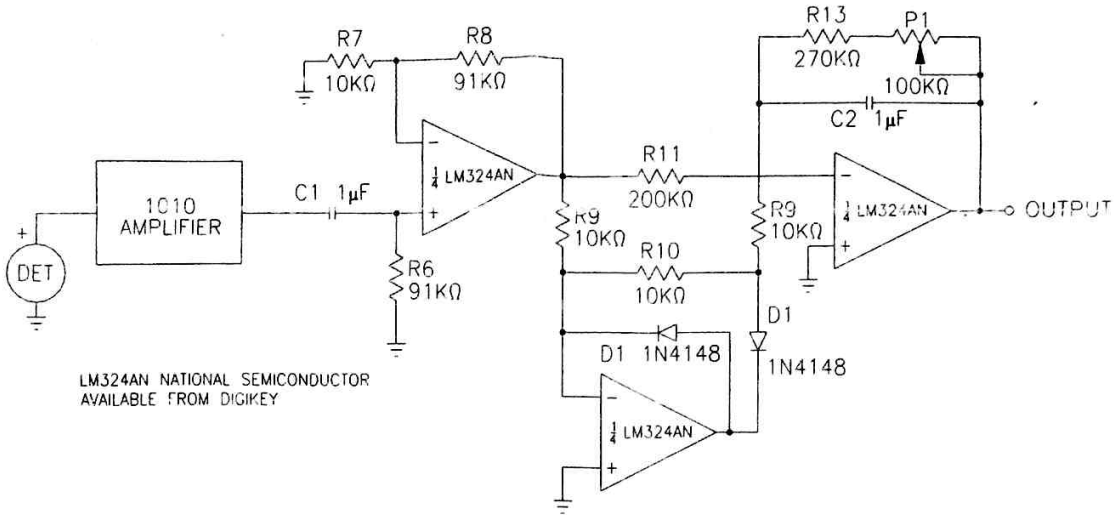
Dexter Research Center, Inc.

We're Everywhere It Matters...

1010 Amplifier



TYPICAL MODULATED SIGNAL RECTIFIER FOR 10 Hz (Full Wave) USING 1010 AMPLIFIER

Adjust RC circuit (C1 & R6) for modulation frequency

Operating Instructions:

INPUT CONNECTOR: A shorting type BNC cap is used to protect the amplifier input. When the amplifier is not connected to an input source this cap should be reconnected to prevent draining the batteries.

OFFSET ADJUSTMENT: The amplifier DC offset can be adjusted with a small screwdriver through an access hole in the side of the housing. This adjustment is by means of a 22 turn cermet potentiometer. Adjust offset with detector connected. Blinded detector should be at thermal equilibrium for at least 15 minutes. Then adjust offset to your reference voltage (zero in most cases).

BATTERY REPLACEMENT: Remove the top cover by loosening the four screws. These screws are held captive to the cover. Replace the batteries with 9-Volt alkaline batteries. Replace cover.

CAUTION: Do not allow inner flange of cover to pinch the battery wires or the batteries.

Dexter Research Center, Inc.

We're Everywhere It Matters...

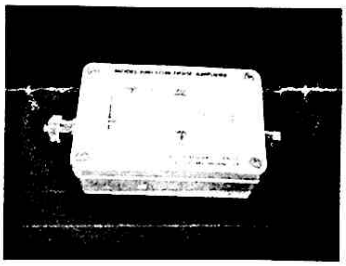
1010 Amplifier

Low Noise Amplifier

Technical Description:

The Model 1010 amplifier is a DC coupled amplifier that is compact, rugged and battery powered. The amplifier circuit and batteries are housed in a die casted aluminum case. The micro powered circuit design gives a **continuous operating life of more than one year** from the two internal batteries (included). BNC connectors are used for signal input and output connections.

The very low voltage noise and current noise in the critical low frequency region of 0.1 Hz to 10 Hz makes the Model 1010 ideal for use with thermopile detectors. To prevent accidental damage to the input transistors the input is diode protected.



1010 Amplifier

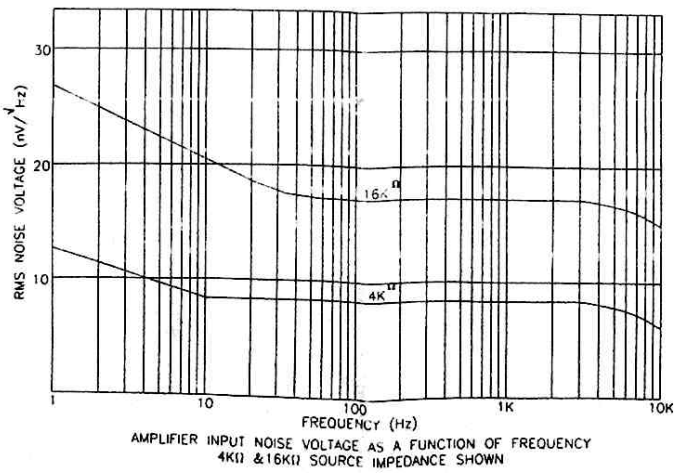
Features

- DC Coupled
- Low Noise
- DC offset Adjustment
- Micro Power
- 100% Electrostatic Shielding
- Battery Powered
- Gain of 1000

Technical Specifications

Specifications apply at 23°C

Parameter	Specification	Units	Comments
Gain	1000	V/V	60dB
	≤1	$mV_{peak\ to\ peak}$	DC input to 10KHz
Bandwidth (-3dB)	8	$mV_{peak\ to\ peak}$	DC input to 3KHz
	15	$mV_{peak\ to\ peak}$	DC input to 1.7KHz
Noise (.1Hz to 10Hz)	250	$nV_{peak\ to\ peak}$	
Maximum Output	±7.0	V	
Input Impedance	1	MΩ	
Output Impedance	300	Ω	
Output Load Minimum	10	kΩ	
Operating Temperature	0-70	°C	
Power Requirements	25	µA	From internal 9V batteries
Package Size	1.4 x 2.5 x 3.9	inches	



AMPLIFIER INPUT NOISE VOLTAGE AS A FUNCTION OF FREQUENCY
4KΩ & 16KΩ SOURCE IMPEDANCE SHOWN