ANALOG MODULES, INC.

a HEICO company

MODEL 311

PRECISION LOW NOISE
TRANSIMPEDANCE AMPLIFIERS

ULTRA LOW NOISE TRANSIMPEDANCE AMPLIFIER

- **Ultra Low Noise – down to 7 fA/√Hz**
- **High Gain – up to 1 GV/A**
- **Bandwidth - from 120 Hz to 150 kHz**
- **Accepts Current Sources Inputs**

DESCRIPTION:

The ***311 Series*** are state-of-the-art precision amplifiers designed for current source input applications in which high gain and low noise are required.

SPECIFICATIONS:

Input	
Impedance	Virtual ground, AC coupled
Capacitance	See graphs on reverse for performance vs. capacitance. Indicate value of input capacitance (add -___pF to part number)
Output	
Load	≥50 Ω
Swing	16 V pk-pk into 1 kΩ 7 V pk-pk into 50 Ω (-1 and -2) 12 V pk-pk into 50 Ω (-3)
Gain	Trimpot adjustable (-3 only)

Polarity	Inverting (add -INV to part number) Non-Inverting (add -NI to part number)
Power	±15 VDC at 30 mA typical (no load)
Temperature	0° to 70°C
Connections	
Input	Pins
Output	BNC
Power	Filter feed-thru pins and ground lug
Bias	Pin decoupled with 0.1 μF, 100 V capacitor. (See table on reverse.)
Size	3.12" x 1.50" x 1.09"
Weight	3.2 ounces

Specifications subject to change without notice.

APPLICATIONS:

Ultra Low Noise, Low and Medium Bandwidth Transimpedance Amplifier for Detectors and Transducers

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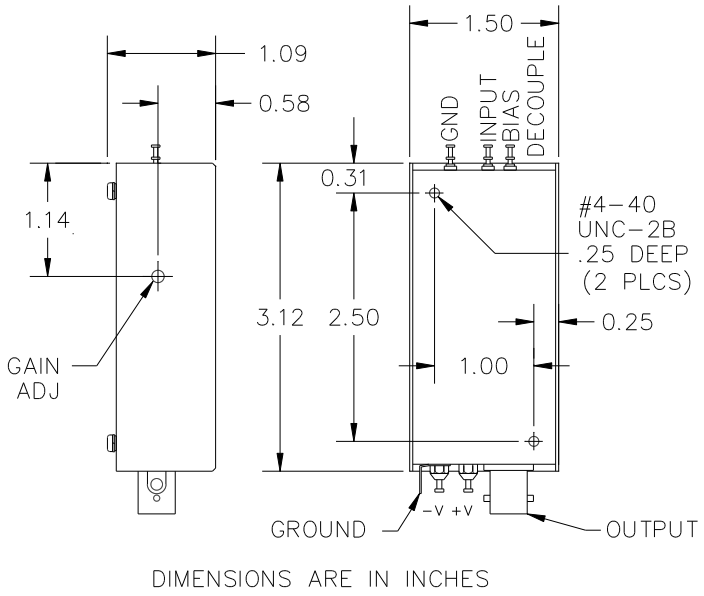
		MODEL NUMBER		
		GAIN		
		1 GV/A	100 MV/A	10-100 MV/A
Bandwidth [1] ± 20%	≤120 Hz to 2 kHz	**311-1**	------	------
	≤120 Hz to 10 kHz	-----	**311-2**	------
	≤120 Hz to 150 kHz	-----	------	**311-3**
	≤120 Hz to 2 MHz	-----	------	------
Noise [1] ± 20%	Current Noise (Open circuit input)	7 fA/√Hz	20 fA/√Hz	0.58 pA/√Hz

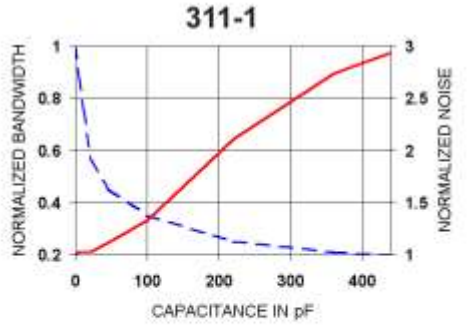
[1] With 1pF input capacitance. See graphs for performance with other values.

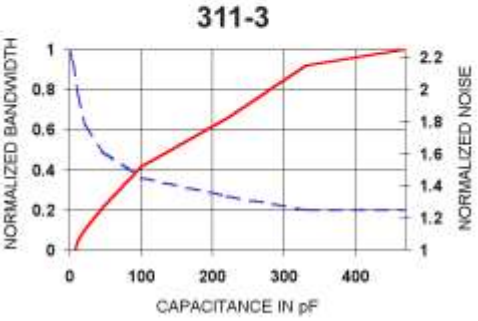
Typical Part Number: ***311-1-INV-1pF =***

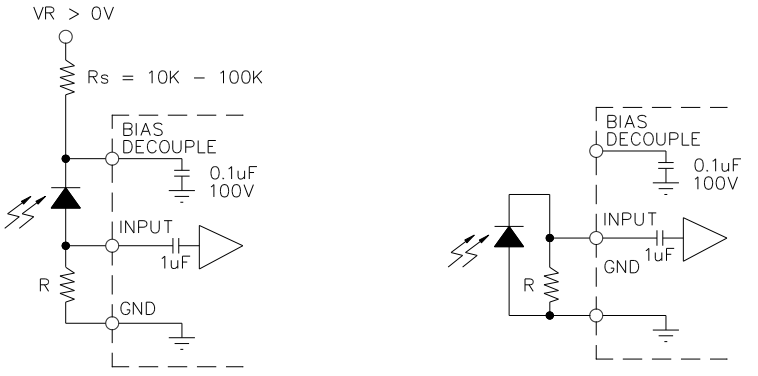
Bandwidth: ≤120 Hz to 2 kHz
Gain: 1 GV/A
Polarity: Inverting
Noise: 7 fA/√Hz
Input Capacitance: 1 pF



DIMENSIONS ARE IN INCHES







TYPICAL PHOTODETECTOR APPLICATIONS