Datasheet LCA-200-10G

Ultra-Low-Noise Current Amplifier



Features	 Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF) Extremely Low Noise, 1.5 fA/√Hz Equivalent Input Noise Current Bandwidth DC 200 Hz Transimpedance (Gain) 1 x 10¹⁰ V/A Photodiode- and Photomultiplier-Amplifier Spectroscopy Charge-Amplifier Ionisation Detectors Preamplifier for Lock-Ins, A/D-Converters, etc. 	
Applications		
Specifications	Test Conditions	$\label{eq:Vs} \begin{split} \text{Vs} = & \pm 15 \text{ V, Ta} = 25^{\circ}\text{C} \\ \text{Warm-up 20 minutes (min. 10 minutes recommended)} \end{split}$
Gain	Transimpedance Accuracy	1 x 10 10 V/A (>10 kΩ Load) ± 1%
Frequency Response	Lower Cut-Off Frequency Upper Cut-Off Frequency Rise- / Fall-Time Gain Flatness	DC 200 Hz (- 3 dB) 2 ms (10% - 90%) ± 0.1 dB
Input	Equ. Input Noise Current Equ. Input Noise Voltage Input Bias Current Input Bias Current Drift Offset Current Compensation Max. Input Current Input Offset Voltage DC Input Impedance	1.5 fA/ $\sqrt{\text{Hz}}$ (@ 10 Hz) 90 nV/ $\sqrt{\text{Hz}}$ (@ 10 Hz) 20 fA typ. / 30 fA max. Factor 2 / 10 K ± 300 pA, Adjustable by Offset-Trimpot ± 1 nA (Linear Amplification) < 0.5 mV 1 kΩ (Virtual) // 5 pF
Output	Output Voltage Output Impedance Max. Output Current	\pm 10 V (>10 k Ω Load) 50 Ω (Terminate with >10 k Ω for best Performance) \pm 10 mA (Linear Amplification)
Power Supply	Supply Voltage Supply Current	\pm 15 V \pm 15 mA typ.
Case	Weight Material	210 gr. (0.5 lbs) AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature Operating Temperature	-40 +100 °C 0 +60 °C

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

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Absolute Maximum Ratings	Input Voltage Power Supply Voltage	± 10 V ± 22 V
Connectors	Input Output	BNC BNC
	Power Supply	LEMO Series 1S, 3-pin Fixed Socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND PIN 2 PIN 3 GND PIN 3 GND

Application Diagrams

Photo Detector Biasing in Photovoltaic Mode: Use for Low Speed Applications and Minimum Dark Current.

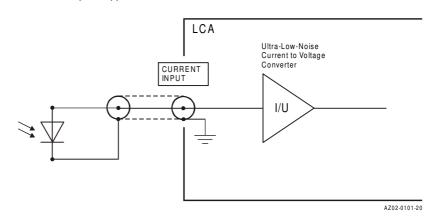
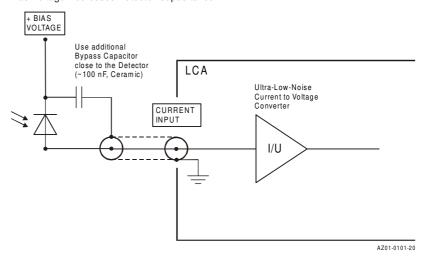


Photo Detector Biasing in Photoconductive Mode: Use for Fast Applications and if More Dark Current is Tolerable. Bias Voltage Decreases Detector Capacitance.

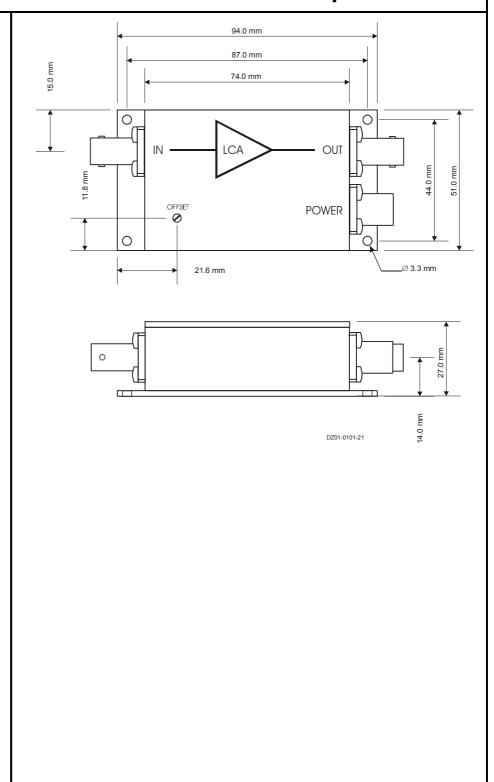


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Ultra-Low-Noise Current Amplifier

Dimensions



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