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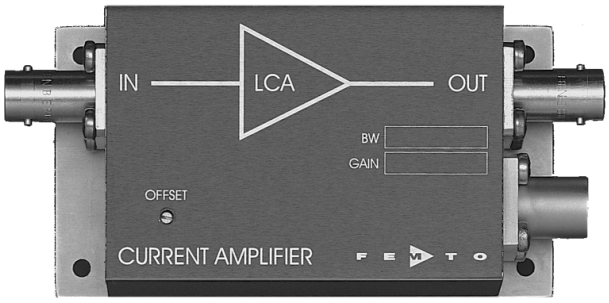
Datasheet LCA-10K-500M

Ultra-Low-Noise Current Amplifier



Features

- **Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF)**
- **Extremely Low Noise, 10 fA/√Hz Equivalent Input Noise Current**
- **Bandwidth DC ... 10 kHz**
- **Transimpedance (Gain) 5 x 10^8 V/A**

Applications

- **Photodiode- and Photomultiplier-Amplifier**
- **Spectroscopy**
- **Charge-Amplifier**
- **Ionisation Detectors**
- **Preamplifier for Lock-Ins, A/D-Converters, etc.**

Specifications

		Test Conditions	*Vs = ± 15 V, Ta = 25°C*
Gain		Transimpedance	5 x 10^8 V/A (>10 kΩ Load)
		Accuracy	± 1%
Frequency Response		Lower Cut-Off Frequency	DC
		Upper Cut-Off Frequency	10 kHz (- 3 dB)
		Rise- / Fall-Time	40 µs (10% - 90%)
		Gain Flatness	± 0.1 dB
Input		Equ. Input Noise Current	10 fA/√Hz (@ 1 kHz)
		Equ. Input Noise Voltage	5 nV/√Hz (@ 1 kHz)
		Input Bias Current	2 pA typ.
		Input Bias Current Drift	Factor 1.7 / 10 K
		Offset Current Compensation	± 6 nA, Adjustable by Offset-Trimpot
		Max. Input Current	± 20 nA (Linear Amplification)
		Input Offset Voltage	< 1 mV
		DC Input Impedance	50 Ω (Virtual) // 5 pF
Output		Output Voltage	± 10 V (>10 kΩ Load)
		Output Impedance	50 Ω (Terminate with >10 kΩ for best Performance)
		Max. Output Current	± 10 mA (Linear Amplification)
Power Supply		Supply Voltage	± 15 V
		Supply Current	± 40 mA typ.
Case		Weight	210 gr. (0.5 lbs)
		Material	AlMg4.5Mn, nickel-plated
Temperature Range		Storage Temperature	-40 ... +100 °C
		Operating Temperature	0 ... +60 °C

Absolute Maximum Ratings	Input Voltage	± 5 V
	Power Supply Voltage	± 22 V

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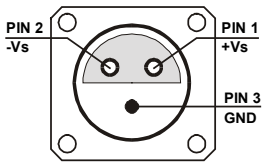
Connectors	Input	BNC
	Output	BNC
	Power Supply	LEMO Series 1S, 3-pin Fixed Socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND



Application Diagrams

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

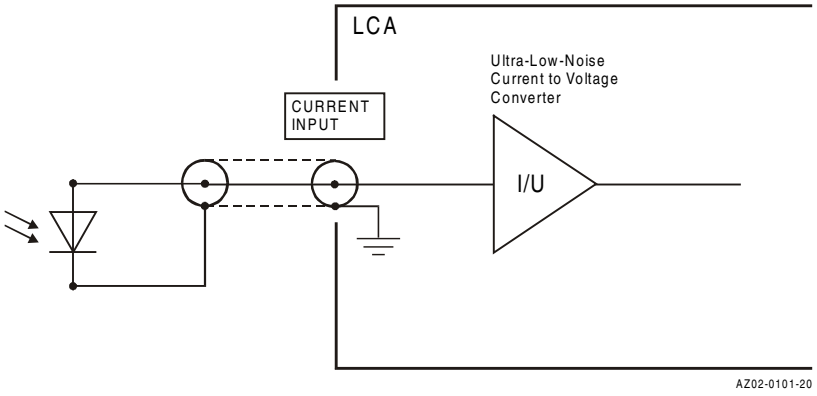
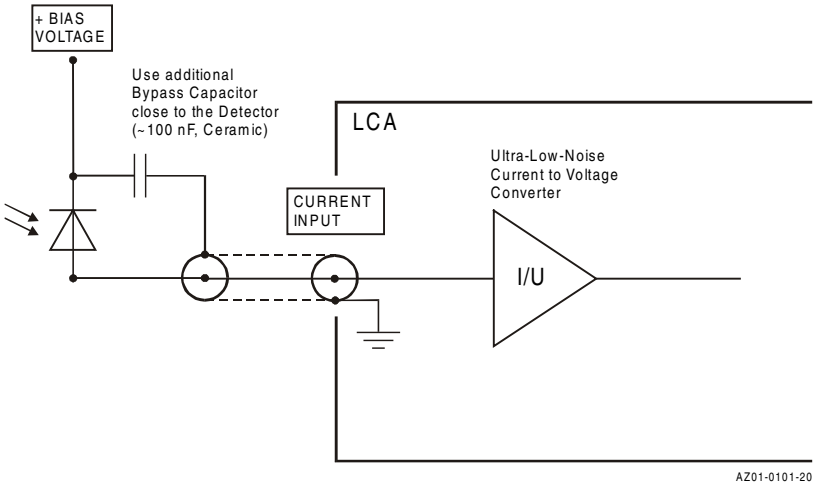
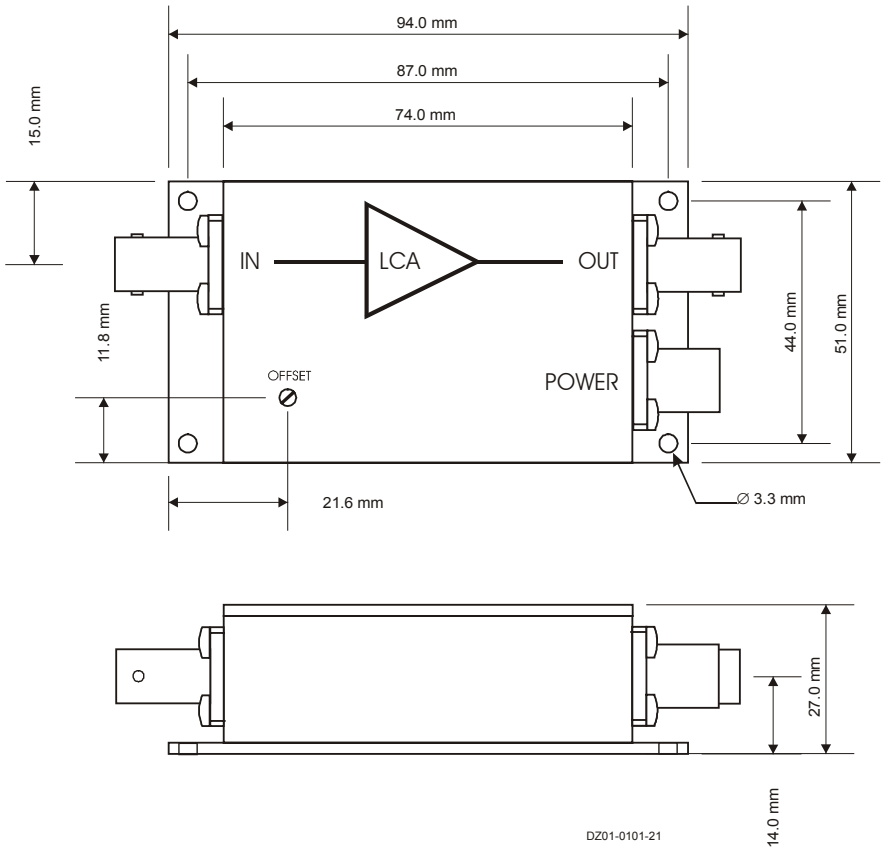


Photo Detector Biasing in Photoconductive Mode:
Use for Fast Applications and if More Dark Current is Tolerable.
Bias Voltage Decreases Detector Capacitance.



Ultra-Low-Noise Current Amplifier

Dimensions



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