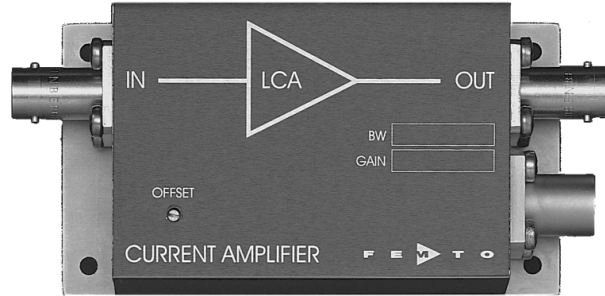




Datasheet

LCA-100K-50M

Ultra-Low-Noise Current Amplifier



Features	<ul style="list-style-type: none"> • Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF) • Extremely Low Noise, 30 fA/√Hz Equivalent Input Noise Current • Bandwidth DC ... 100 kHz • Transimpedance (Gain) 5 x 10⁷ V/A 	
Applications	<ul style="list-style-type: none"> • Photodiode- and Photomultiplier-Amplifier • Spectroscopy • Charge-Amplifier • Ionisation Detectors • Preamplifier for Lock-Ins, A/D-Converters, etc. 	
Specifications	<i>Test Conditions</i>	<i>V_s = ± 15 V, T_a = 25°C</i>
Gain	Transimpedance Accuracy	5 x 10 ⁷ V/A (>10 kΩ Load) ± 1%
Frequency Response	Lower Cut-Off Frequency Upper Cut-Off Frequency Rise- / Fall-Time Gain Flatness	DC 100 kHz (- 3 dB) 4 μs (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	30 fA/√Hz (@ 10 kHz) 5 nV/√Hz (@ 10 kHz) 2 pA typ. Factor 1.7 / 10 K ± 60 nA, Adjustable by Offset-Trimpot ± 200 nA (Linear Amplification) < 1 mV 50 Ω (Virtual) // 5 pF
Output	Output Voltage Output Impedance Max. Output Current	± 10 V (>10 kΩ Load) 50 Ω (Terminate with >10 kΩ for best Performance) ± 10 mA (Linear Amplification)
Power Supply	Supply Voltage Supply Current	± 15 V ± 40 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
Absolute Maximum Ratings	Input Voltage Power Supply Voltage	± 5 V ± 22 V

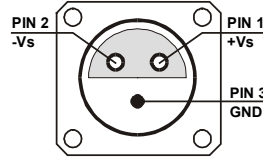
Datasheet

LCA-100K-50M

Ultra-Low-Noise Current Amplifier

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.

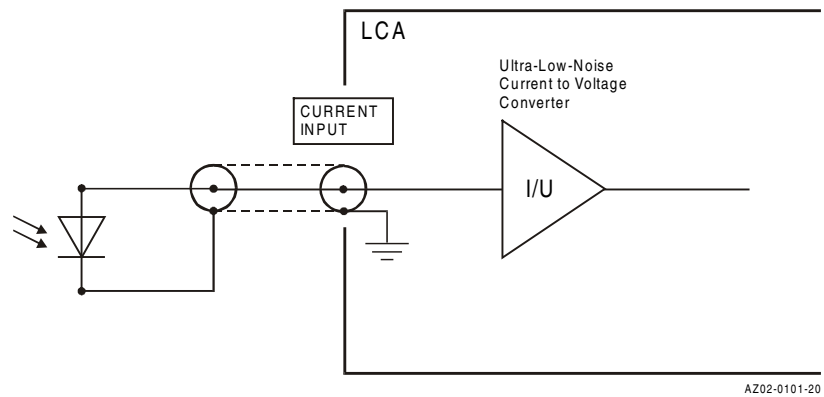
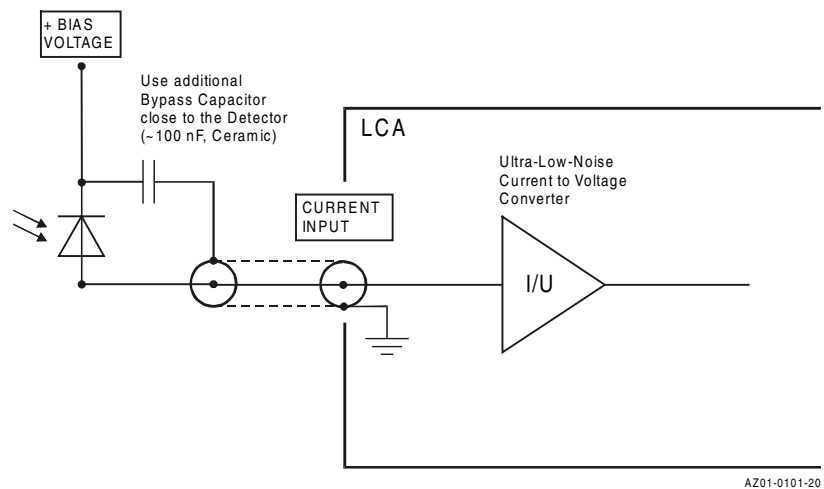


Photo Detector Biasing in Photoconductive Mode:
 Use for Fast Applications and if More Dark Current is Tolerable.
 Bias Voltage Decreases Detector Capacitance.

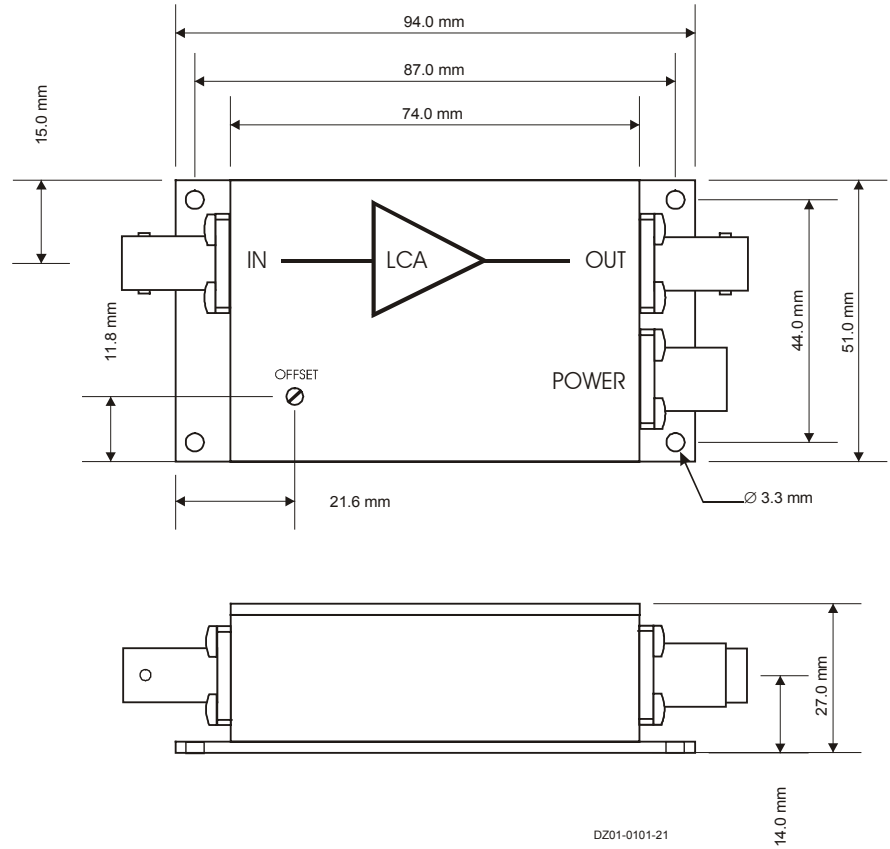


Datasheet

LCA-100K-50M

Ultra-Low-Noise Current Amplifier

Dimensions



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