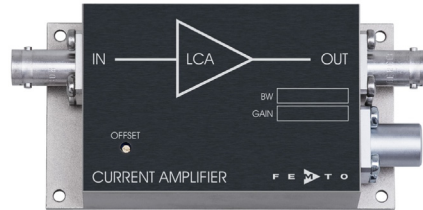


Datasheet

LCA-4K-1G

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, 6.5 fA/√Hz Equivalent Input Noise Current • Bandwidth DC ... 4 kHz • Transimpedance (Gain) 1 x 10⁹ 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	<table border="0"> <tr> <td>Test Conditions</td> <td>V_s = ± 15 V, T_a = 25°C</td> </tr> <tr> <td>Gain</td> <td>Transimpedance 1 x 10⁹ V/A (>10 kΩ Load) Accuracy ± 1%</td> </tr> <tr> <td>Frequency Response</td> <td>Lower Cut-Off Frequency DC Upper Cut-Off Frequency 4 kHz (- 3 dB) Rise- / Fall-Time 100 μs (10% - 90%) Gain Flatness ± 0.1 dB</td> </tr> <tr> <td>Input</td> <td>Equ. Input Noise Current 6.5 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 ± 3 nA, Adjustable by Offset-Trimpot Max. Input Current ± 10 nA (Linear Amplification) Input Offset Voltage < 1 mV DC Input Impedance 50 Ω (Virtual) // 5 pF</td> </tr> <tr> <td>Output</td> <td>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)</td> </tr> <tr> <td>Power Supply</td> <td>Supply Voltage ± 15 V Supply Current ± 40 mA typ.</td> </tr> <tr> <td>Case</td> <td>Weight 210 gr. (0.5 lbs) Material AlMg4.5Mn, nickel-plated</td> </tr> <tr> <td>Temperature Range</td> <td>Storage Temperature -40 ... +100 °C Operating Temperature 0 ... +60 °C</td> </tr> </table>	Test Conditions	V _s = ± 15 V, T _a = 25°C	Gain	Transimpedance 1 x 10 ⁹ V/A (>10 kΩ Load) Accuracy ± 1%	Frequency Response	Lower Cut-Off Frequency DC Upper Cut-Off Frequency 4 kHz (- 3 dB) Rise- / Fall-Time 100 μs (10% - 90%) Gain Flatness ± 0.1 dB	Input	Equ. Input Noise Current 6.5 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 ± 3 nA, Adjustable by Offset-Trimpot Max. Input Current ± 10 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
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SOPHISTICATED TOOLS FOR SIGNAL RECOVERY



DE-LCA-4K-1G_R6/JM/13MAR2019

Datasheet

LCA-4K-1G

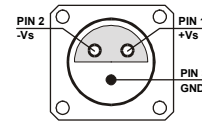
Ultra-Low-Noise Current Amplifier

Absolute Maximum Ratings

Input Voltage ± 5 V
Power Supply Voltage ± 22 V

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.

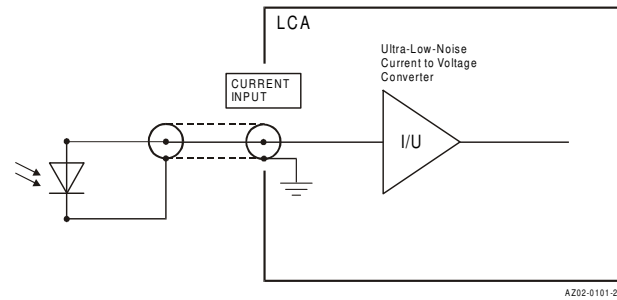
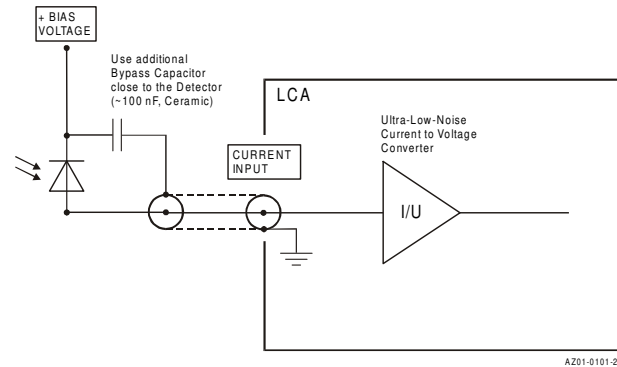


Photo Detector Biasing in Photoconductive Mode:
Use for Fast Applications and if More Dark Current is Tolerable.
Bias Voltage Decreases Detector Capacitance.



SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

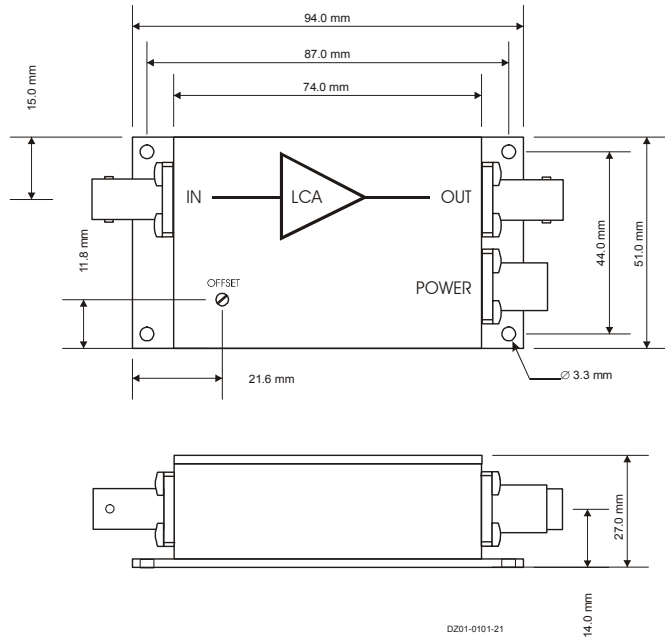


Datasheet

LCA-4K-1G

Ultra-Low-Noise Current Amplifier

Dimensions



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SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

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