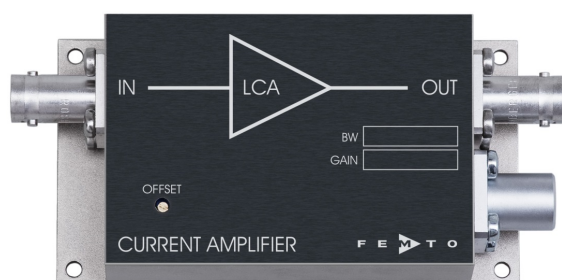


Ultra-Low-Noise Current Amplifier



<p>Features</p>	<ul style="list-style-type: none"> • Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF) • Extremely Low Noise, 3 fA/√Hz Equivalent Input Noise Current • Bandwidth DC ... 1 kHz • Transimpedance (Gain) 5 x 10⁹ V/A 	
<p>Applications</p>	<ul style="list-style-type: none"> • Photodiode- and Photomultiplier-Amplifier • Spectroscopy • Charge-Amplifier • Ionisation Detectors • Preamplifier for Lock-Ins, A/D-Converters, etc. 	
<p>Specifications</p>	<p>Test Conditions</p> <p>Gain</p> <p>Frequency Response</p> <p>Input</p> <p>Output</p> <p>Power Supply</p> <p>Case</p> <p>Temperature Range</p>	<p>$V_s = \pm 15\text{ V}, T_a = 25^\circ\text{C}$</p> <p>Transimpedance $5 \times 10^9\text{ V/A}$ ($>10\text{ k}\Omega$ Load)</p> <p>Accuracy $\pm 1\%$</p> <p>Lower Cut-Off Frequency DC</p> <p>Upper Cut-Off Frequency 1 kHz (-3 dB)</p> <p>Rise- / Fall-Time 400 μs (10% - 90%)</p> <p>Gain Flatness $\pm 0.1\text{ dB}$</p> <p>Equ. Input Noise Current 3 fA/√Hz (@ 300 Hz)</p> <p>Equ. Input Noise Voltage 8 nV/√Hz (@ 300 Hz)</p> <p>Input Bias Current 2 pA typ.</p> <p>Input Bias Current Drift Factor 2.3 / 10 K</p> <p>Offset Current Compensation $\pm 600\text{ pA}$, Adjustable by Offset-Trimpot</p> <p>Max. Input Current $\pm 2\text{ nA}$ (Linear Amplification)</p> <p>Input Offset Voltage $< 1\text{ mV}$</p> <p>DC Input Impedance $50\ \Omega$ (Virtual) // 5 pF</p> <p>Output Voltage $\pm 10\text{ V}$ ($>10\text{ k}\Omega$ Load)</p> <p>Output Impedance $50\ \Omega$ (Terminate with $>10\text{ k}\Omega$ for best Performance)</p> <p>Max. Output Current $\pm 10\text{ mA}$ (Linear Amplification)</p> <p>Supply Voltage $\pm 15\text{ V}$</p> <p>Supply Current $\pm 45\text{ mA typ.}$</p> <p>Weight 210 gr. (0.5 lbs)</p> <p>Material AlMg4.5Mn, nickel-plated</p> <p>Storage Temperature $-40 \dots +100\text{ }^\circ\text{C}$</p> <p>Operating Temperature $0 \dots +60\text{ }^\circ\text{C}$</p>

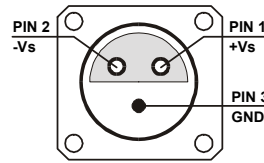
Ultra-Low-Noise Current Amplifier

Absolute Maximum Ratings

Input Voltage	$\pm 7\text{ V}$
Power Supply Voltage	$\pm 22\text{ V}$

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.

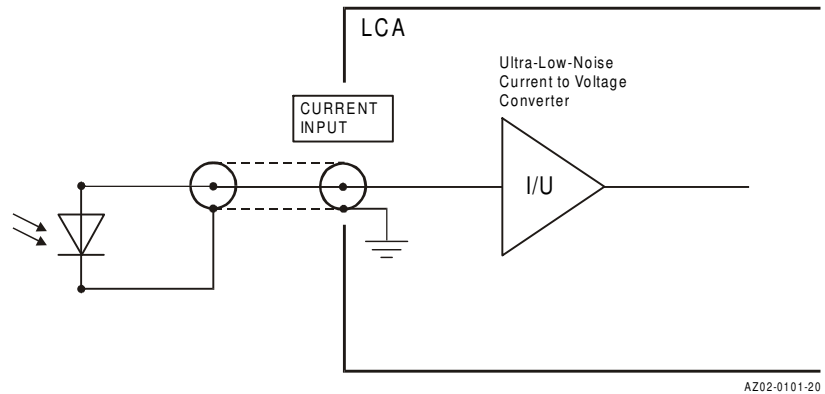
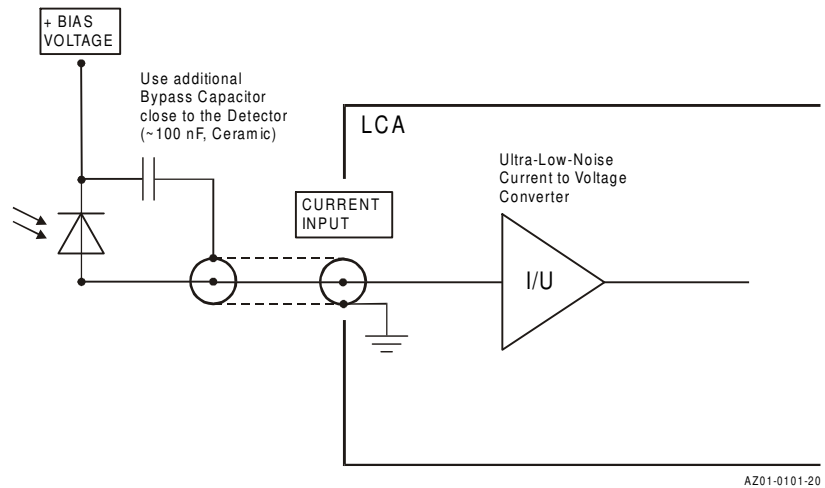
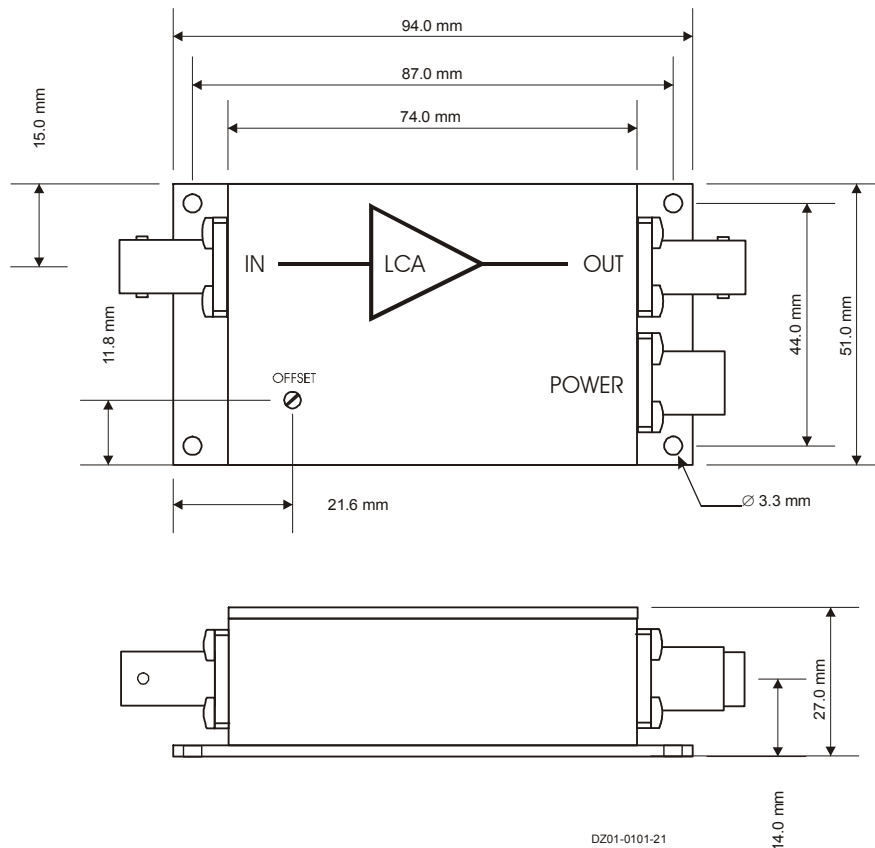


Photo Detector Biasing in Photoconductive Mode:
Use for Fast Applications and if More Dark Current is Tolerable.
Bias Voltage Decreases Detector Capacitance.



Ultra-Low-Noise Current Amplifier

Dimensions



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