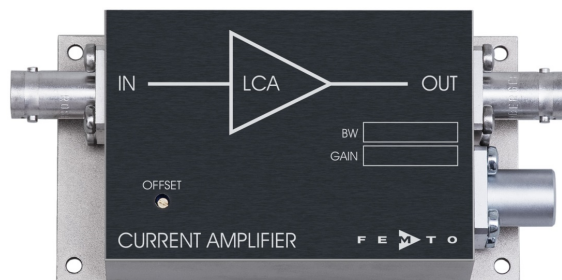


# Ultra-Low-Noise Current Amplifier



<p>Features</p>	<ul style="list-style-type: none"> <li>• <b>Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF)</b></li> <li>• <b>Extremely Low Noise, 0.5 fA/√Hz Equivalent Input Noise Current</b></li> <li>• <b>Bandwidth DC ... 30 Hz</b></li> <li>• <b>Transimpedance (Gain) 1 x 10<sup>12</sup> V/A</b></li> </ul>	
<p>Applications</p>	<ul style="list-style-type: none"> <li>• <b>Photodiode- and Photomultiplier-Amplifier</b></li> <li>• <b>Spectroscopy</b></li> <li>• <b>Charge-Amplifier</b></li> <li>• <b>Ionisation Detectors</b></li> <li>• <b>Preamplifier for Lock-Ins, A/D-Converters, etc.</b></li> </ul>	
<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<sub>s</sub> = ± 15 V, T<sub>a</sub> = 25°C Warm-up 20 minutes (min. 10 minutes recommended)</p> <p>1 x 10<sup>12</sup> V/A (&gt;10 kΩ Load) ± 1%</p> <p>DC 30 Hz (- 3 dB) 12 ms (10% - 90%) ± 0.1 dB</p> <p>0.5 fA/√Hz (@ 10 Hz) 90 nV/√Hz (@ 10 Hz) 20 fA typ. / 30 fA max. Factor 2 / 10 K ± 3 pA, Adjustable by Offset-Trimpot ± 10 pA (Linear Amplification) &lt; 0.5 mV 1 kΩ (Virtual) // 5 pF</p> <p>± 10 V (&gt;10 kΩ Load) 50 Ω (Terminate with &gt;10 kΩ for best Performance) ± 10 mA (Linear Amplification)</p> <p>± 15 V ± 15 mA typ.</p> <p>210 gr. (0.5 lbs) AlMg4.5Mn, nickel-plated</p> <p>-40 ... +100 °C 0 ... +60 °C</p>

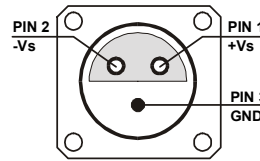
## Ultra-Low-Noise Current Amplifier

Absolute Maximum Ratings

Input Voltage  $\pm 10$  V  
 Power Supply Voltage  $\pm 22$  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.

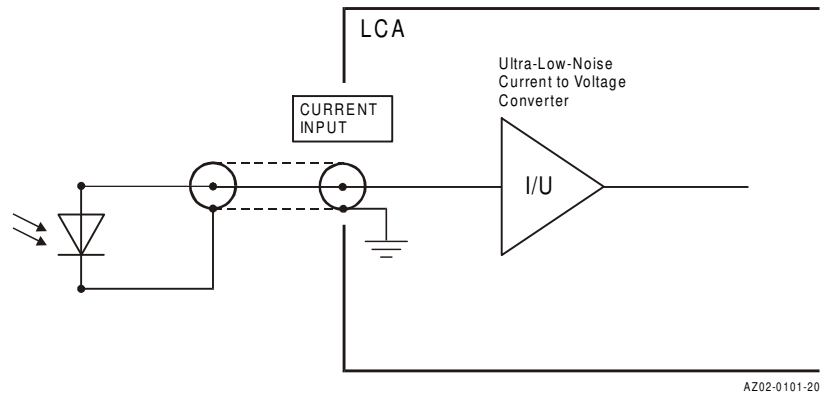
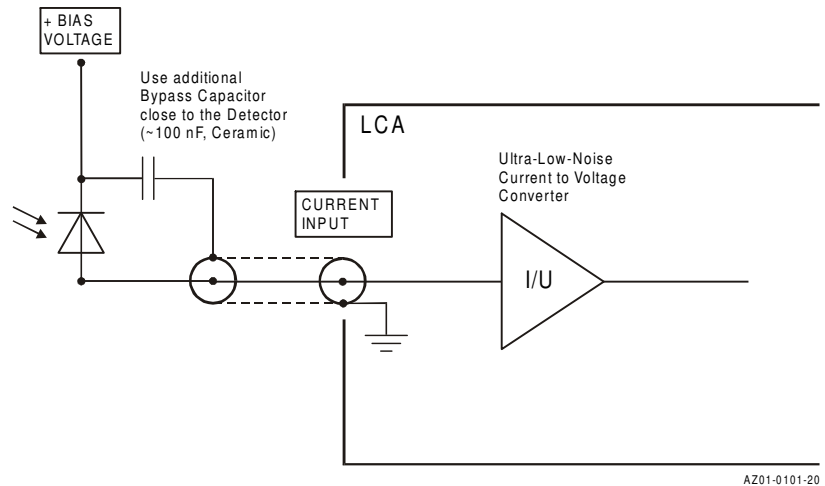
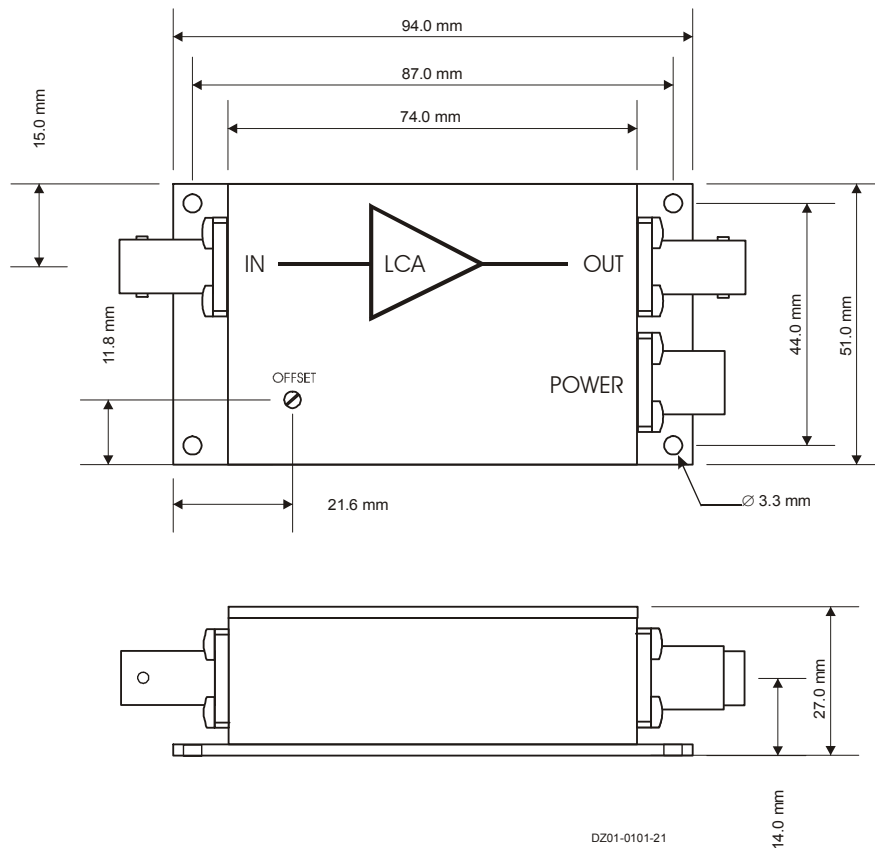


Photo Detector Biasing in Photoconductive Mode:  
 Use for Fast Applications and if More Dark Current is Tolerable.  
 Bias Voltage Decreases Detector Capacitance.



Ultra-Low-Noise Current Amplifier

Dimensions



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