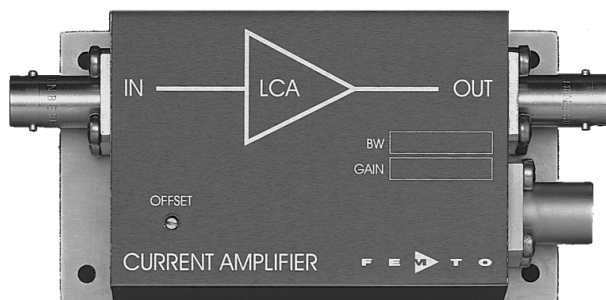


## Ultra-Low-Noise Current Amplifier

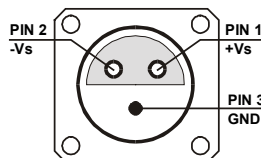


<p>Features</p>	<ul style="list-style-type: none"> <li>• <b>Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 1 nF)</b></li> <li>• <b>Extremely Low Noise, 65 fA/√Hz Equivalent Input Noise Current</b></li> <li>• <b>Bandwidth DC ... 400 kHz</b></li> <li>• <b>Transimpedance (Gain) <math>1 \times 10^7</math> 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><i>Test Conditions</i> <span style="float: right;"><i>Vs = ± 15 V, Ta = 25°C</i></span></p> <table border="0"> <tr> <td style="vertical-align: top;">Gain</td> <td>Transimpedance Accuracy</td> <td><math>1 \times 10^7</math> V/A (&gt;10 kΩ Load) ± 1%</td> </tr> <tr> <td style="vertical-align: top;">Frequency Response</td> <td>Lower Cut-Off Frequency Upper Cut-Off Frequency Rise- / Fall-Time Gain Flatness</td> <td>DC 400 kHz (- 3 dB) 1 μs (10% - 90%) ± 0.1 dB</td> </tr> <tr> <td style="vertical-align: top;">Input</td> <td>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</td> <td>65 fA/√Hz (@ 10 kHz) 5 nV/√Hz (@ 10 kHz) 2 pA typ. Factor 1.7 / 10 K ± 300 nA, Adjustable by Offset-Trimpot ± 1 μA (Linear Amplification) &lt; 1 mV 50 Ω (Virtual) // 5 pF</td> </tr> <tr> <td style="vertical-align: top;">Output</td> <td>Output Voltage Output Impedance Max. Output Current</td> <td>± 10 V (&gt;10 kΩ Load) 50 Ω (Terminate with &gt;10 kΩ for best Performance) ± 10 mA (Linear Amplification)</td> </tr> <tr> <td style="vertical-align: top;">Power Supply</td> <td>Supply Voltage Supply Current</td> <td>± 15 V ± 40 mA typ.</td> </tr> <tr> <td style="vertical-align: top;">Case</td> <td>Weight Material</td> <td>210 gr. (0.5 lbs) AlMg4.5Mn, nickel-plated</td> </tr> <tr> <td style="vertical-align: top;">Temperature Range</td> <td>Storage Temperature Operating Temperature</td> <td>-40 ... +100 °C 0 ... +60 °C</td> </tr> </table>		Gain	Transimpedance Accuracy	$1 \times 10^7$ V/A (>10 kΩ Load) ± 1%	Frequency Response	Lower Cut-Off Frequency Upper Cut-Off Frequency Rise- / Fall-Time Gain Flatness	DC 400 kHz (- 3 dB) 1 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	65 fA/√Hz (@ 10 kHz) 5 nV/√Hz (@ 10 kHz) 2 pA typ. Factor 1.7 / 10 K ± 300 nA, Adjustable by Offset-Trimpot ± 1 μA (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
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## 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.

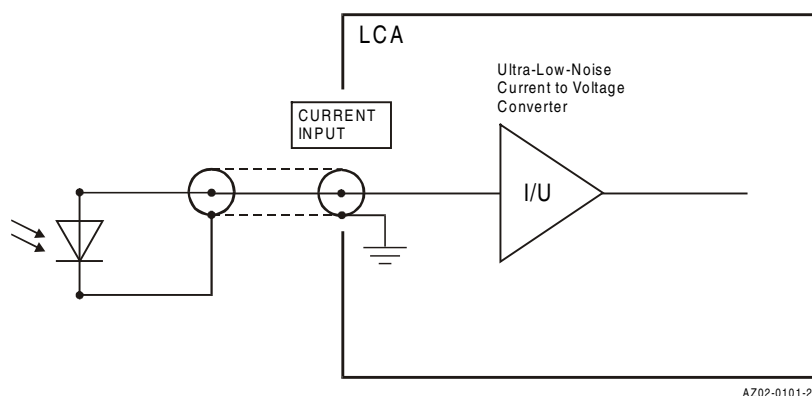
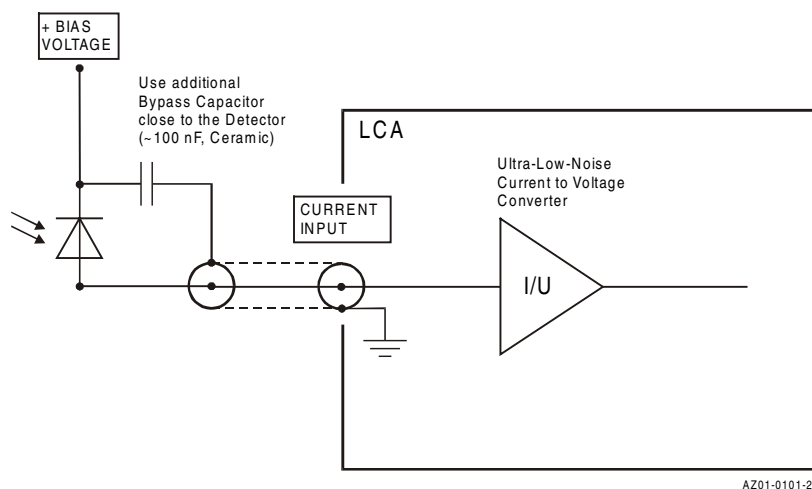
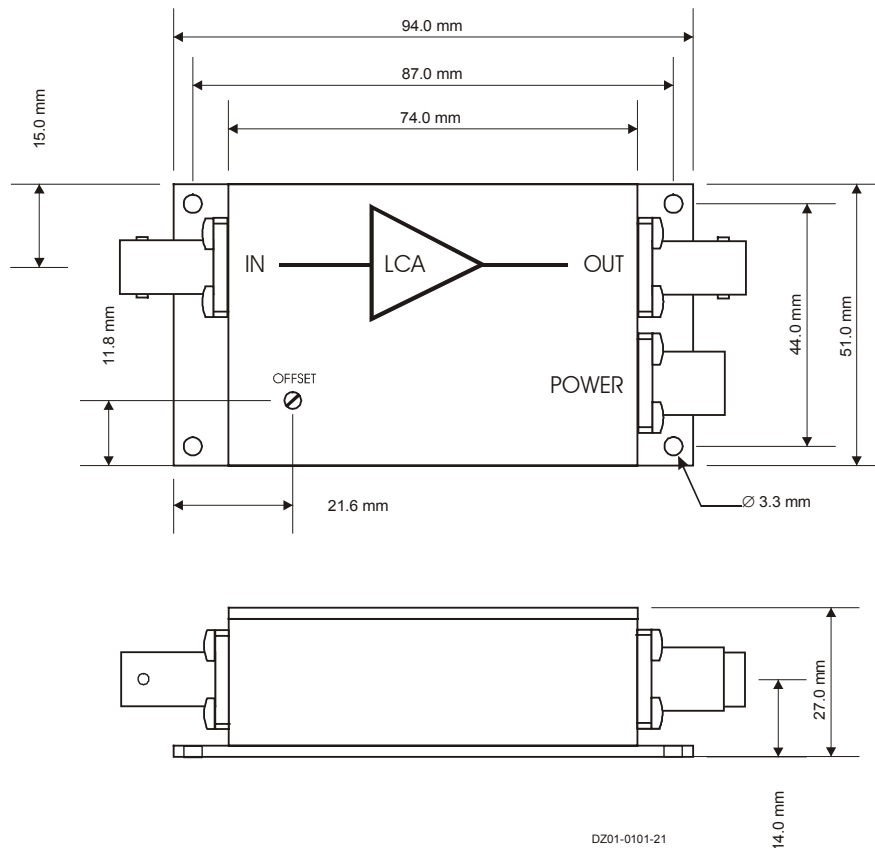


Photo Detector Biasing in Photoconductive Mode:  
 Use for Fast Applications and if More Dark Current is Tolerable.  
 Bias Voltage Decreases Detector Capacitance.



Ultra-Low-Noise Current Amplifier

Dimensions



FEMTO Messtechnik GmbH  
 Paul-Lincke-Ufer 34  
 D-10999 Berlin · Germany  
 Tel.: +49 (0)30 – 4 46 93 86  
 Fax: +49 (0)30 – 4 46 93 88  
 e-mail: info@femto.de  
 http://www.femto.de

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