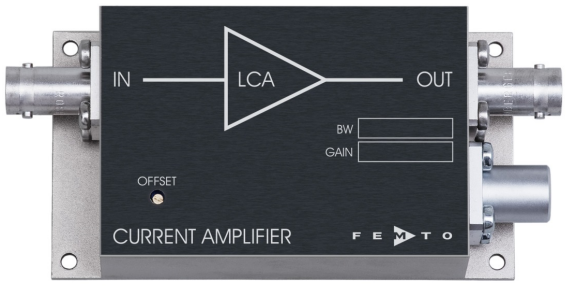
Ultra-Low-Noise Current Amplifier



Features

- **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 10^7 V/A**

Applications

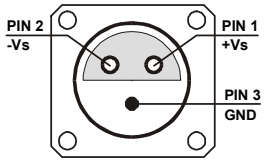
- **Photodiode- and Photomultiplier-Amplifier**
- **Spectroscopy**
- **Charge-Amplifier**
- **Ionisation Detectors**
- **Preamplifier for Lock-Ins, A/D-Converters, etc.**

Specifications

	Test Conditions	Vs = ± 15 V, Ta = 25°C
Gain	Transimpedance	5 x 10^7 V/A (>10 kΩ Load)
	Accuracy	± 1%
Frequency Response	Lower Cut-Off Frequency	DC
	Upper Cut-Off Frequency	100 kHz (- 3 dB)
	Rise- / Fall-Time	4 µs (10% - 90%)
	Gain Flatness	± 0.1 dB
Input	Equ. Input Noise Current	30 fA/√Hz (@ 10 kHz)
	Equ. Input Noise Voltage	5 nV/√Hz (@ 10 kHz)
	Input Bias Current	2 pA typ.
	Input Bias Current Drift	Factor 1.7 / 10 K
	Offset Current Compensation	± 60 nA, Adjustable by Offset-Trimpot
	Max. Input Current	± 200 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

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.

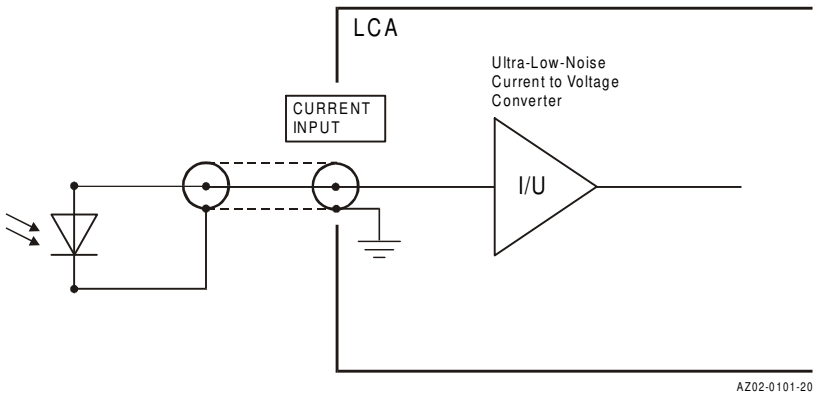
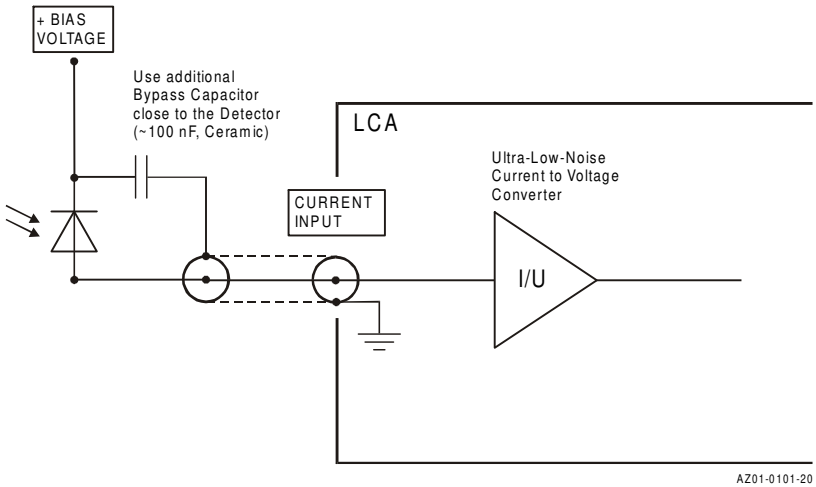
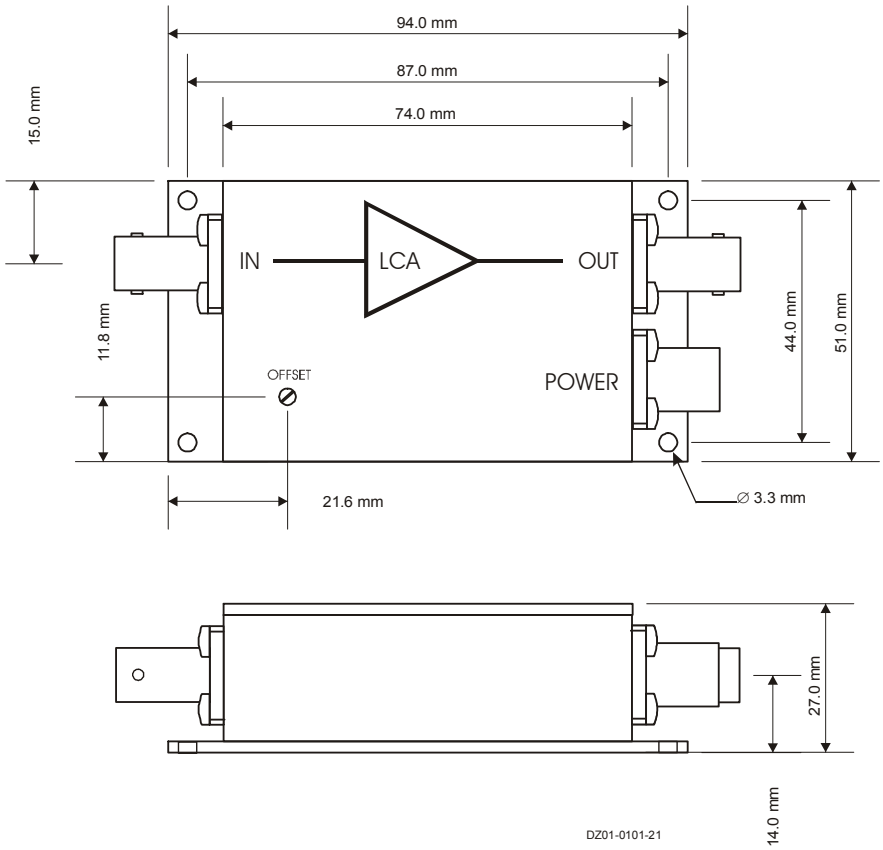


Photo Detector Biasing in Photoconductive Mode:
Use for Fast Applications and if More Dark Current is Tolerable.
Bias Voltage Decreases Detector Capacitance.



Ultra-Low-Noise Current Amplifier

Dimensions



FEMTO Messtechnik GmbH
Klosterstr. 64
10179 Berlin · Germany
Phone: +49 30 280 4711-0
Fax: +49 30 280 4711-11
Email: info@femto.de
www.femto.de