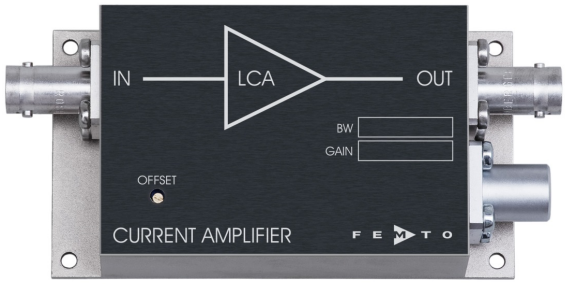
Datasheet LCA-20K-200M

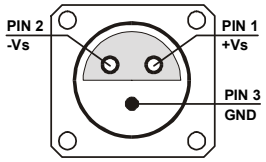
Ultra-Low-Noise Current Amplifier



Features	• **Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF)** • **Extremely Low Noise, 14 fA/√Hz Equivalent Input Noise Current** • **Bandwidth DC ... 20 kHz** • **Transimpedance (Gain) 2 x 10^8 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	2 x 10^8 V/A (>10 kΩ Load)
		Accuracy	± 1%
	Frequency Response	Lower Cut-Off Frequency	DC
		Upper Cut-Off Frequency	20 kHz (- 3 dB)
		Rise- / Fall-Time	20 µs (10% - 90%)
		Gain Flatness	± 0.1 dB
	Input	Equ. Input Noise Current	14 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	± 15 nA, Adjustable by Offset-Trimpot
		Max. Input Current	± 50 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.

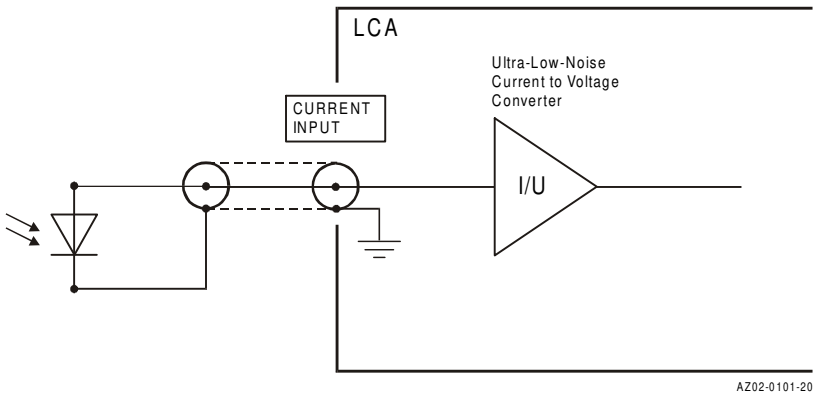
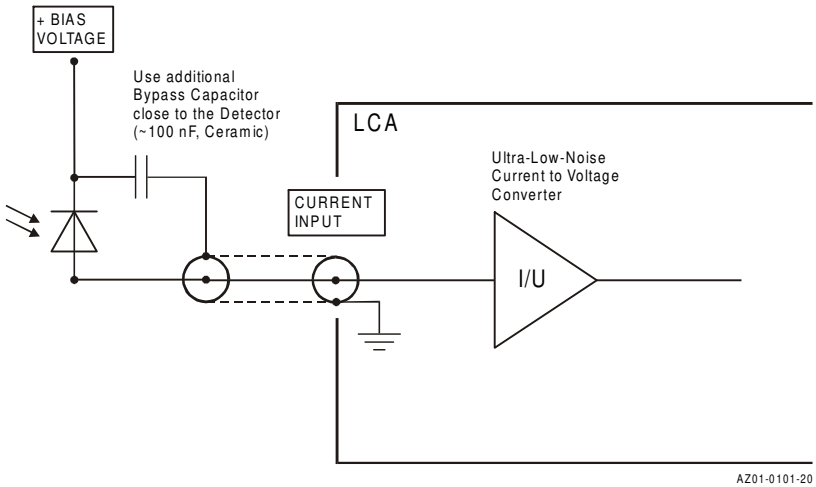
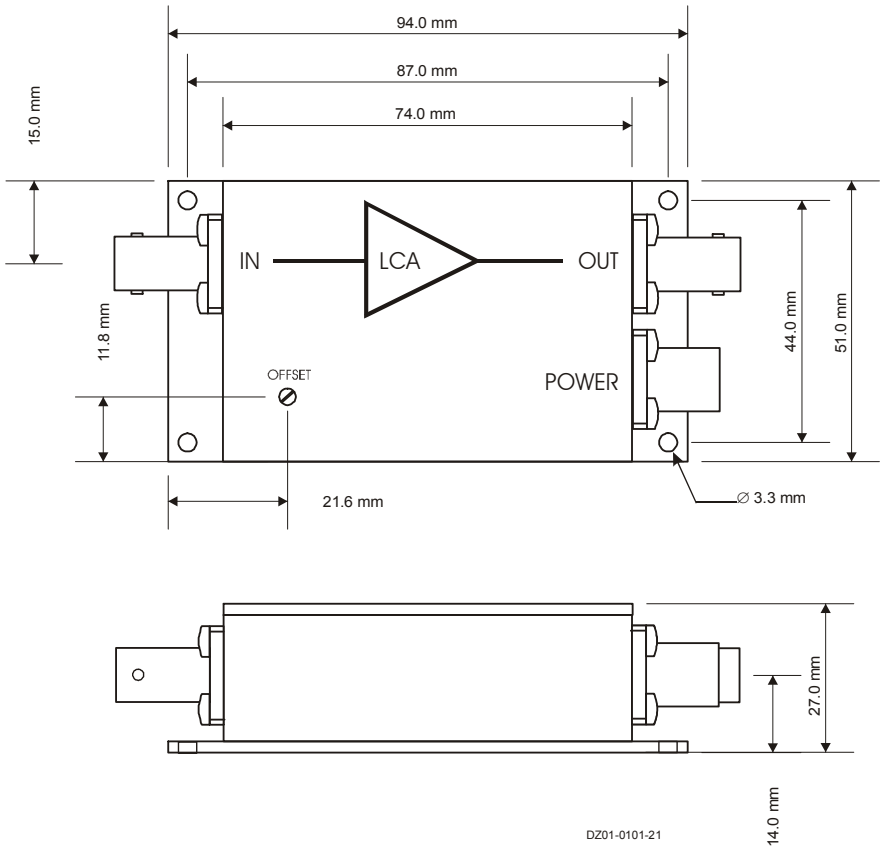


Photo Detector Biasing in Photoconductive Mode:
Use for Fast Applications and if More Dark Current is Tolerable.
Bias Voltage Decreases Detector Capacitance.



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