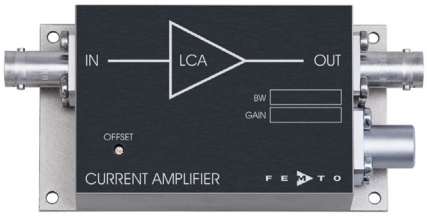
Measurement Devices

FEMTO®

LASER COMPONENTS®

Datasheet LCA-200-100G

Ultra-Low-Noise Current Amplifier



Features	• **Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF)** • **Extremely Low Noise, 1.5 fA/√Hz Equivalent Input Noise Current** • **Bandwidth DC ... 200 Hz** • **Transimpedance (Gain) 1 x 10^{11} 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 Warm-up 20 minutes (min. 10 minutes recommended)
	Gain	Transimpedance Accuracy	1 x 10^{11} V/A (>10 kΩ Load) ± 1%
	Frequency Response	Lower Cut-Off Frequency Upper Cut-Off Frequency Rise- / Fall-Time Gain Flatness	DC 200 Hz (- 3 dB) 2 ms (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	1.5 fA/√Hz (@ 10 Hz) 90 nV/√Hz (@ 10 Hz) 20 fA typ. / 30 fA max. Factor 2 / 10 K ± 30 pA, Adjustable by Offset-Trimpot ± 100 pA (Linear Amplification) < 0.5 mV 1 kΩ (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 ± 15 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

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY FEMTO

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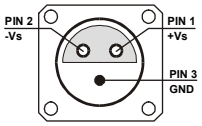
Absolute Maximum Ratings	Input Voltage	± 10 V
	Power Supply Voltage	± 22 V
Connectors	Input	BNC
	Output	BNC
	Power Supply	LEMO Series 1S, 3-pin Fixed Socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND



Application Diagrams

Photo Detector Biasing in Photovoltaic Mode:
Use for Low Speed Applications and Minimum Dark Current.

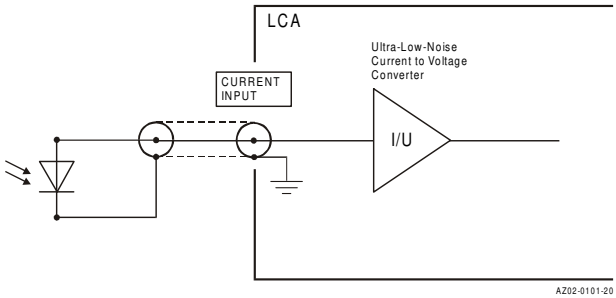
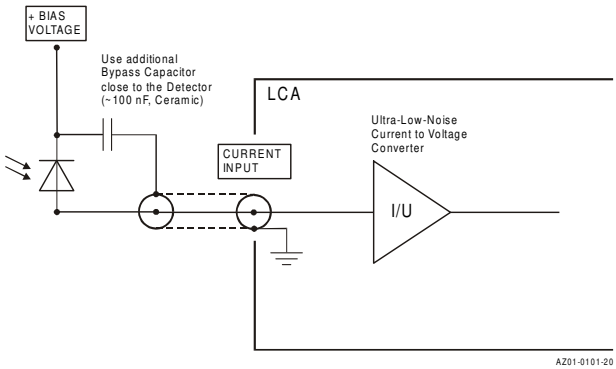


Photo Detector Biasing in Photoconductive Mode:
Use for Fast Applications and if More Dark Current is Tolerable.
Bias Voltage Decreases Detector Capacitance.



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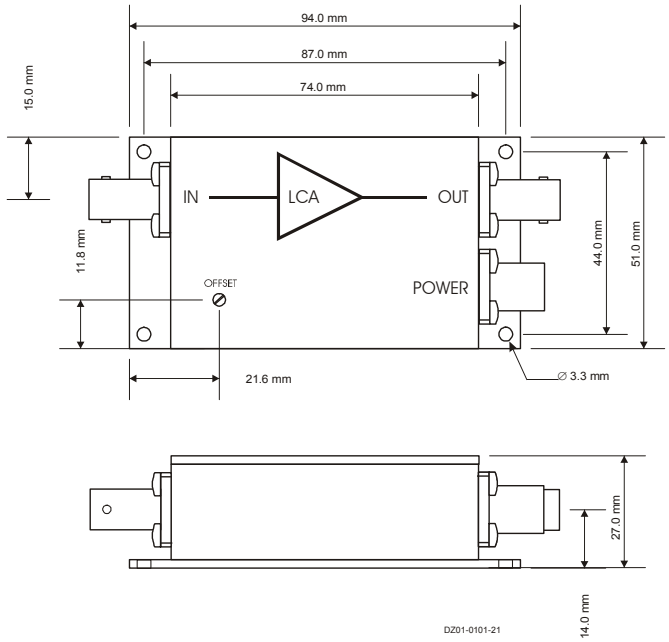
Dimensions



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