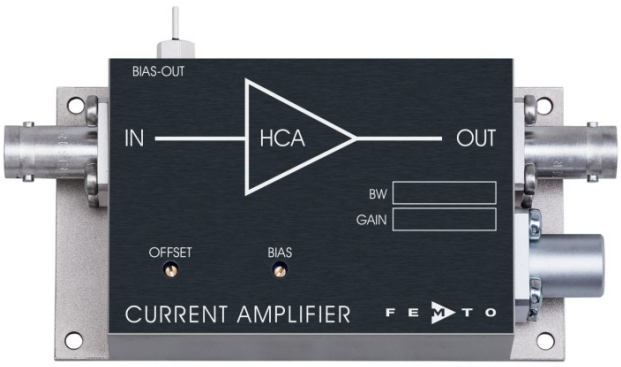
High-Speed Current Amplifier



Features	• **Bandwidth and Frequency Response Independent of Detector Capacitance (up to 500 pF)** • **Low Noise 3.5 pA/√Hz Equivalent Input Noise Current** • **Bandwidth DC ... 4 MHz** • **Transimpedance (Gain) 5 x 10^5 V/A** • **Protection against ± 3.5 kV Transients**		
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 10^5 V/A (@ 50 Ω load)	
	Gain Accuracy	± 1 %	
Frequency Response	Lower Cut-Off Frequency	DC	
	Upper Cut-Off Frequency (- 3 dB)	4 MHz	
	Rise / Fall Time (10 % - 90 %)	90 ns	
	Gain Flatness	± 0.3 dB	
Input	Equ. Input Noise Current	3.5 pA/√Hz (@ 100 kHz)	
	Equ. Input Noise Voltage	0.8 nV/√Hz (@ 100 kHz)	
	Input Bias Current	18 µA typ.	
	Input Bias Current Drift	0.8 nA / K	
	Offset Current Compensation	± 6 µA adjustable by offset trimpot	
	Input Current Range	± 3 µA (for linear amplification)	
	Input Offset Voltage	3 mV	
	DC Input Impedance	50 Ω (virtual) // 5 pF	
Output	Output Voltage Range	± 1.5 V (@ 50 Ω load) for linear operation and low harmonic distortion	
	Output Impedance	50 Ω (terminate with 50 Ω load for best performance)	
Bias Output	Bias Output Voltage Range	± 12 V, adjustable by bias trimpot	
	Bias Output Impedance	10 kΩ // 1 µF	

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Specifications (continued)

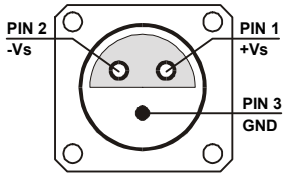
Power Supply	Supply Voltage	± 15 V
	Supply Current	± 50 mA typ. (depends on operating conditions, recommended power supply capability minimum ± 150 mA)
Case	Weight	210 g (0.5 lbs)
	Material	AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature	-40 ... +100 °C
	Operating Temperature	0 ... +60 °C

Absolute Maximum Ratings

Input Voltage	± 5 V
Input Voltage Transient	± 3.5 kV (pulsewidth 10 ns)
Power Supply Voltage	± 22 V

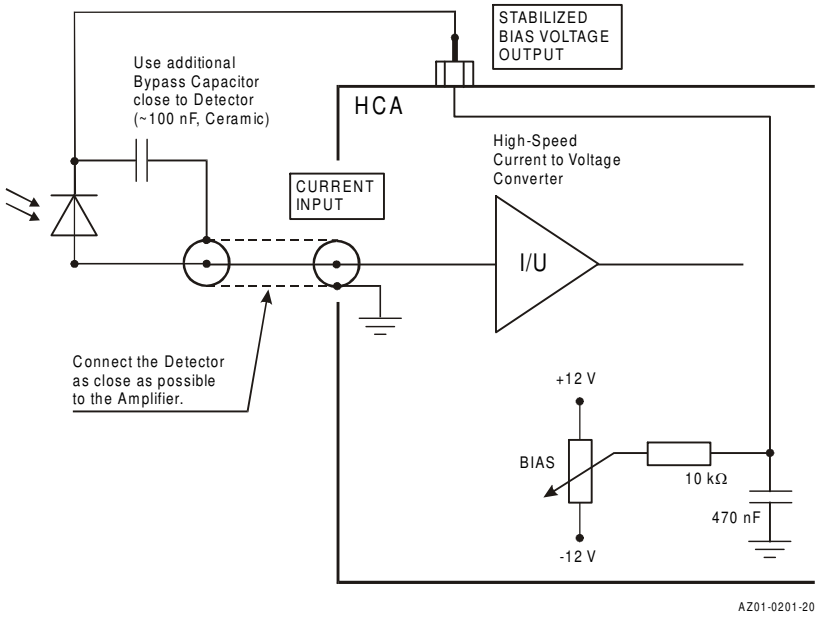
Connectors

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 Photoconductive Mode:
Best choice for high speed applications and optimum signal to noise performance.



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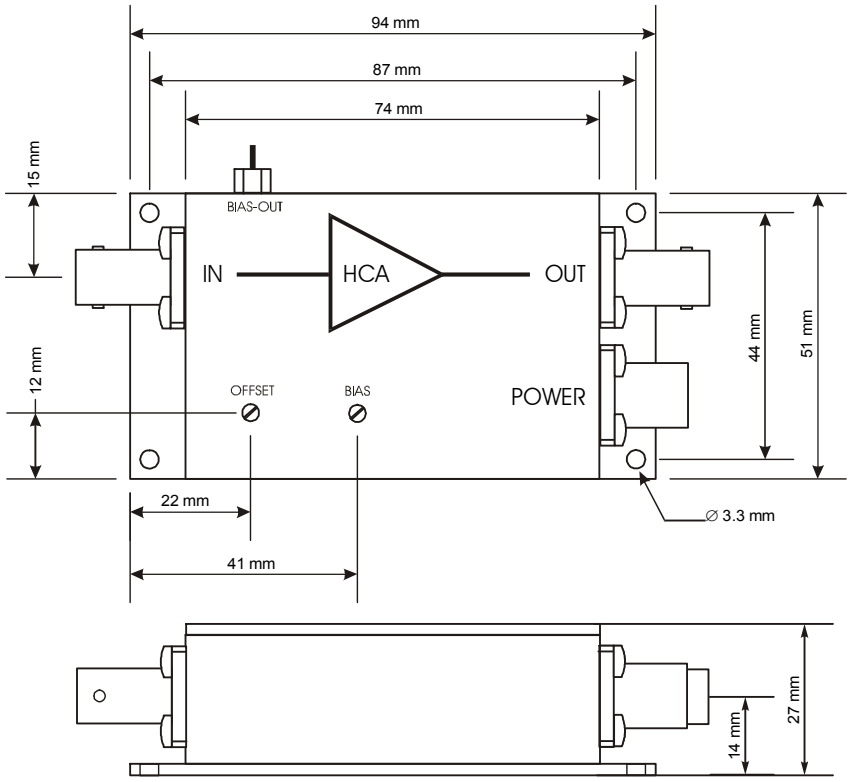
Dimensions



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