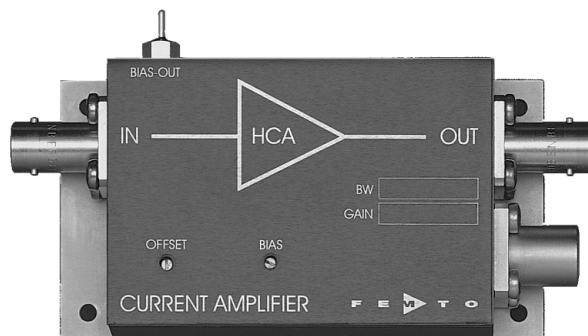


# High Speed Current Amplifier



<p>Features</p>	<ul style="list-style-type: none"> <li>• <b>Bandwidth and Frequency Response Independent of Detector Capacitance (up to 15 pF)</b></li> <li>• <b>Low Noise 490 fA/√Hz Equivalent Input Noise Current</b></li> <li>• <b>Bandwidth DC ... 4 MHz</b></li> <li>• <b>Transimpedance (Gain) 5 x 10<sup>5</sup> V/A</b></li> <li>• <b>Protection against ± 3.5 kV Transients</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>Test Conditions</p> <p>Vs = ± 15 V, Ta = 25°C</p> <p>Gain</p> <p>Transimpedance 5 x 10<sup>5</sup> V/A (@ 50 Ω load)</p> <p>Gain Accuracy ± 1 %</p> <p>Frequency Response</p> <p>Lower Cut-Off Frequency DC</p> <p>Upper Cut-Off Frequency (- 3 dB) 4 MHz</p> <p>Rise / Fall Time (10 % - 90 %) 90 ns</p> <p>Gain Flatness ± 0.3 dB</p> <p>Input</p> <p>Equ. Input Noise Current 490 fA/√Hz (@ 100 kHz)</p> <p>Equ. Input Noise Voltage 6 nV/√Hz (@ 100 kHz)</p> <p>Input Bias Current 5 pA typ.</p> <p>Input Bias Current Drift Factor 1.7 / 10 K</p> <p>Offset Current Compensation ± 4 µA adjustable by offset trimpot</p> <p>Input Current Range ± 3 µA (for linear amplification)</p> <p>Input Offset Voltage 2 mV</p> <p>DC Input Impedance 50 Ω (virtual) // 5 pF</p> <p>Output</p> <p>Output Voltage Range ± 1.5 V (@ 50 Ω load)</p> <p>for linear operation and low harmonic distortion</p> <p>Output Impedance 50 Ω (terminate with 50 Ω load for best performance)</p> <p>Bias Output</p> <p>Bias Output Voltage Range ± 12 V, adjustable by bias trimpot</p> <p>Bias Output Impedance 10 kΩ // 1 µF</p>	

## High Speed Current Amplifier

Specifications (continued)

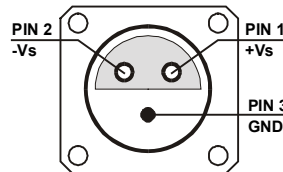
Power Supply	Supply Voltage	$\pm 15\text{ V}$
	Supply Current	$\pm 50\text{ mA typ.}$ (depends on operating conditions, recommended power supply capability minimum $\pm 150\text{ mA}$ )
Case	Weight	210 g (0.5 lbs)
	Material	AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature	$-40 \dots +100\text{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

Absolute Maximum Ratings

Input Voltage	$\pm 5\text{ V}$
Input Voltage Transient	$\pm 3.5\text{ kV}$ (pulsewidth 10 ns)
Power Supply Voltage	$\pm 22\text{ V}$

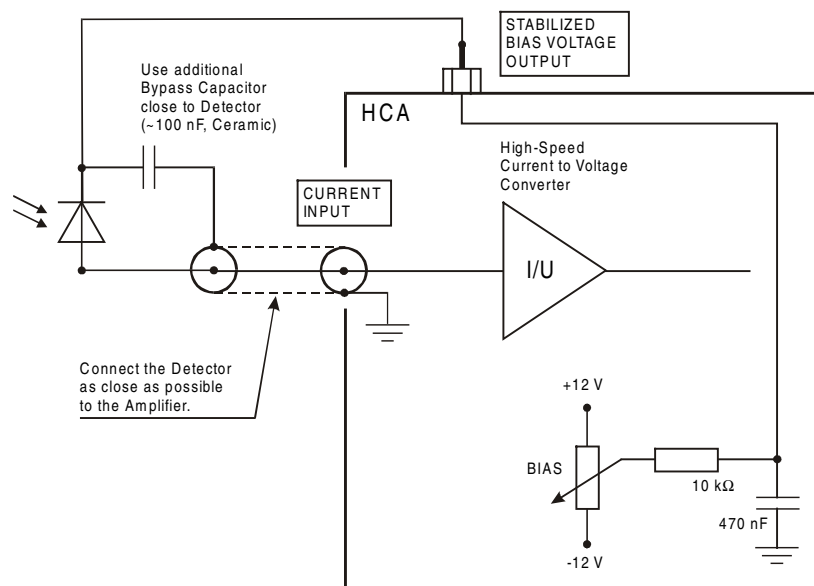
Connectors

Input	BNC
Output	BNC
Power Supply	LEMO series 1S, 3-pin fixed socket
	Pin 1: +15V
	Pin 2: -15V
	Pin 3: GND



Application Diagrams

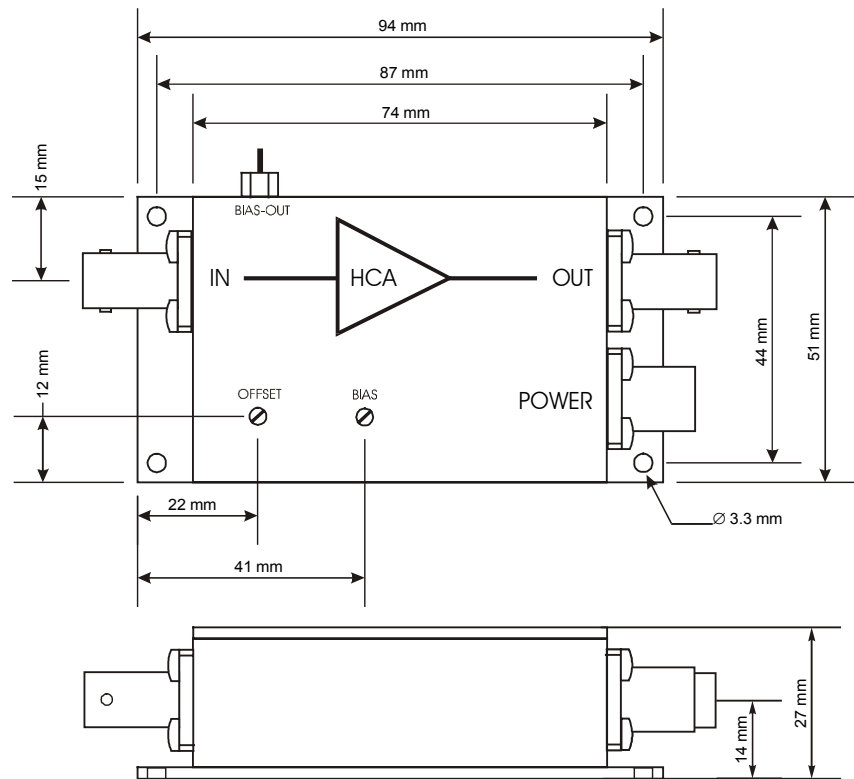
Photo Detector Biasing in Photoconductive Mode:  
Best choice for high speed applications and optimum signal to noise performance.



AZ01-0201-20

# High Speed Current Amplifier

Dimensions



DZ01-0201-22

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