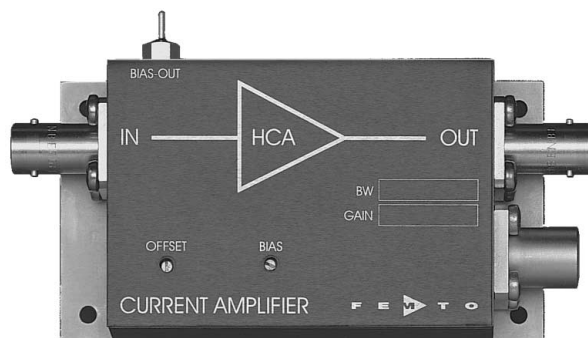


# High-Speed Current Amplifier



<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, 1.1pA/√Hz equivalent Input Noise Current</b></li> <li>• <b>Bandwidth DC ... 10 MHz</b></li> <li>• <b>Transimpedance (Gain) 1 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>	<table border="0"> <tr> <td></td> <td><i>Test Conditions</i></td> <td><i>Vs = ± 15 V, Ta = 25°C</i></td> </tr> <tr> <td rowspan="2">Gain</td> <td>Transimpedance</td> <td>1 x 10<sup>5</sup> V/A (50 Ω Load)</td> </tr> <tr> <td>Gain Accuracy</td> <td>± 1 %</td> </tr> <tr> <td rowspan="4">Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td>DC</td> </tr> <tr> <td>Upper Cut-Off Frequency</td> <td>10 MHz (- 3 dB)</td> </tr> <tr> <td>Rise- / Fall-Time</td> <td>35 ns (10% - 90%)</td> </tr> <tr> <td>Gain Flatness</td> <td>± 0.3 dB</td> </tr> <tr> <td rowspan="8">Input</td> <td>Equ. Input Noise Current</td> <td>1.1pA/√Hz (@ 100 kHz)</td> </tr> <tr> <td>Equ. Input Noise Voltage</td> <td>6 nV/√Hz (@ 100 kHz)</td> </tr> <tr> <td>Input Bias Current</td> <td>5 pA typ.</td> </tr> <tr> <td>Input Bias Current Drift</td> <td>Factor 1.7 / 10 K</td> </tr> <tr> <td>Offset Current Compensation</td> <td>± 20 µA, adjustable by Offset-Trimpot</td> </tr> <tr> <td>Max. Input Current</td> <td>± 15 µA (linear Amplification)</td> </tr> <tr> <td>Input Offset Voltage</td> <td>&lt; 2 mV</td> </tr> <tr> <td>DC Input Impedance</td> <td>50 Ω (virtual) // 5 pF</td> </tr> <tr> <td rowspan="2">Output</td> <td>Output Voltage</td> <td>± 1.5 V (50 Ω Load)</td> </tr> <tr> <td>Output Impedance</td> <td>50 Ω</td> </tr> <tr> <td rowspan="2">Bias Output</td> <td>Bias Output Voltage Range</td> <td>± 12 V, adjustable by Bias-Trimpot</td> </tr> <tr> <td>Bias Output Impedance</td> <td>10 kΩ // 1 µF</td> </tr> <tr> <td rowspan="2">Power Supply</td> <td>Supply Voltage</td> <td>± 15 V</td> </tr> <tr> <td>Supply Current</td> <td>± 50 mA typ.</td> </tr> <tr> <td rowspan="2">Case</td> <td>Weight</td> <td>210 gr. (0.5 lbs)</td> </tr> <tr> <td>Material</td> <td>AlMg4.5Mn, nickel-plated</td> </tr> </table>			<i>Test Conditions</i>	<i>Vs = ± 15 V, Ta = 25°C</i>	Gain	Transimpedance	1 x 10 <sup>5</sup> V/A (50 Ω Load)	Gain Accuracy	± 1 %	Frequency Response	Lower Cut-Off Frequency	DC	Upper Cut-Off Frequency	10 MHz (- 3 dB)	Rise- / Fall-Time	35 ns (10% - 90%)	Gain Flatness	± 0.3 dB	Input	Equ. Input Noise Current	1.1pA/√Hz (@ 100 kHz)	Equ. Input Noise Voltage	6 nV/√Hz (@ 100 kHz)	Input Bias Current	5 pA typ.	Input Bias Current Drift	Factor 1.7 / 10 K	Offset Current Compensation	± 20 µA, adjustable by Offset-Trimpot	Max. Input Current	± 15 µA (linear Amplification)	Input Offset Voltage	< 2 mV	DC Input Impedance	50 Ω (virtual) // 5 pF	Output	Output Voltage	± 1.5 V (50 Ω Load)	Output Impedance	50 Ω	Bias Output	Bias Output Voltage Range	± 12 V, adjustable by Bias-Trimpot	Bias Output Impedance	10 kΩ // 1 µF	Power Supply	Supply Voltage	± 15 V	Supply Current	± 50 mA typ.	Case	Weight	210 gr. (0.5 lbs)	Material	AlMg4.5Mn, nickel-plated
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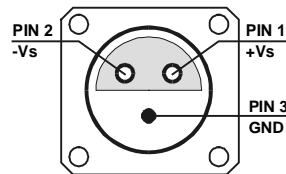
## High-Speed Current Amplifier

Specifications (continued)

Temperature Range	Storage Temperature	-40 ... +100 °C
	Operating Temperature	0 ... +60 °C

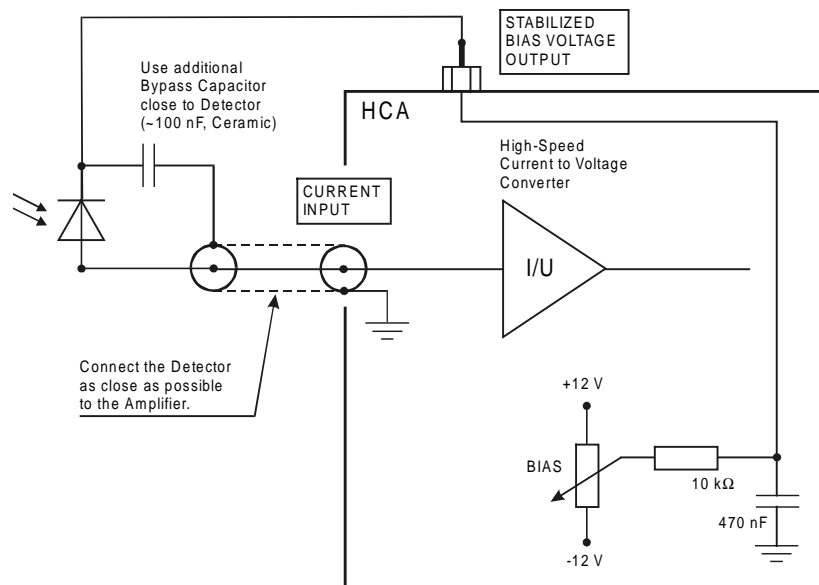
Absolute Maximum Ratings	Input Voltage	± 5 V
	Input Voltage Transient	± 3.5 kV (Pulsewidth 10 ns)
	Power Supply Voltage	± 22 V

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

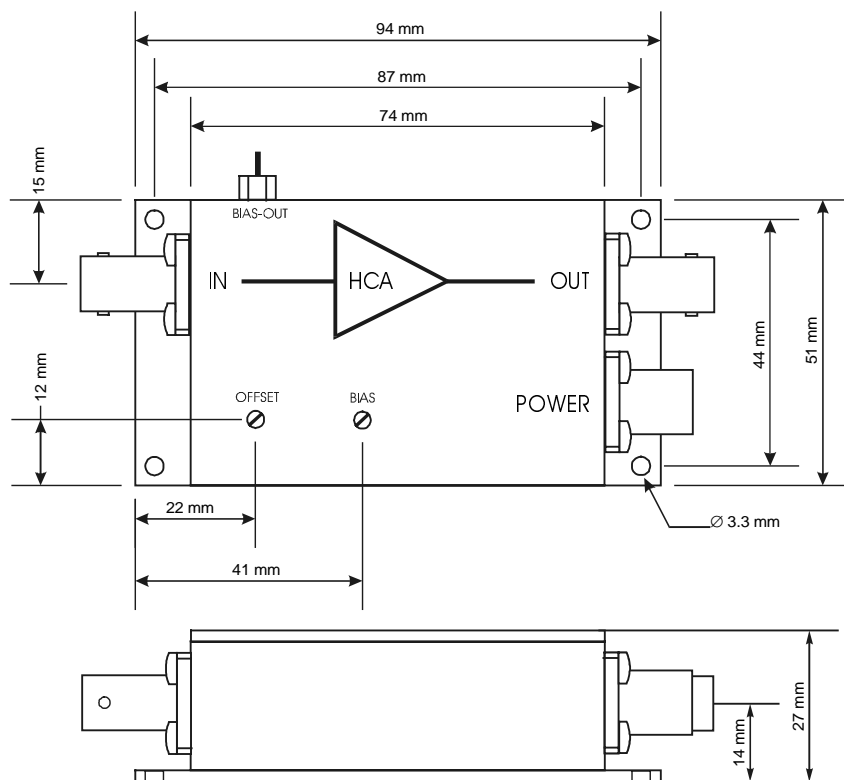
Photo Detector Biasing in Photoconductive Mode:  
Best Choice for High-Speed Applications and optimum Signal To Noise Performance.



AZ01-0201-20

### High-Speed Current Amplifier

Dimensions



DZ01-0201-22

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