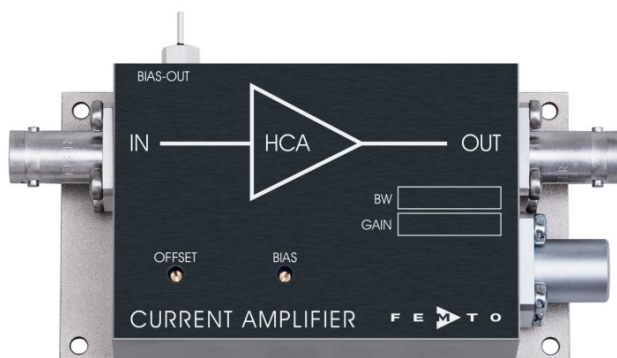


High-Speed Current Amplifier



Features	• Bandwidth and Frequency Response Independent of Detector Capacitance (up to 50 pF) • Low Noise 3.5 pA/√Hz Equivalent Input Noise Current • Bandwidth DC ... 20 MHz • Transimpedance (Gain) 1×10^5 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	$V_s = \pm 15$ V, $T_a = 25^\circ\text{C}$
Gain	Transimpedance	1×10^5 V/A (@ 50 Ω load)
	Gain Accuracy	± 1 %
Frequency Response	Lower Cut-Off Frequency	DC
	Upper Cut-Off Frequency (- 3 dB)	20 MHz
	Rise / Fall Time (10 % - 90 %)	18 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 μ A typ.
	Input Bias Current Drift	0.8 nA / K
	Offset Current Compensation	± 20 μ A adjustable by offset trimpot
	Input Current Range	± 15 μ A (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 k Ω // 1 μ F

High-Speed Current Amplifier

Specifications (continued)

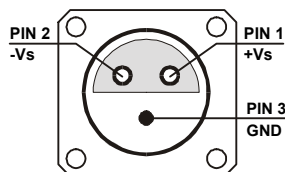
Power Supply	Supply Voltage	$\pm 15\text{ V}$
	Supply Current	$\pm 70\text{ mA typ.}$ (depends on operating conditions, recommended power supply capability minimum $\pm 150\text{ mA}$)
Case	Weight	210 g (0.5 lbs)
	Material	AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature	$-40 \dots +100\text{ }^{\circ}\text{C}$
	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	$\pm 22\text{ V}$

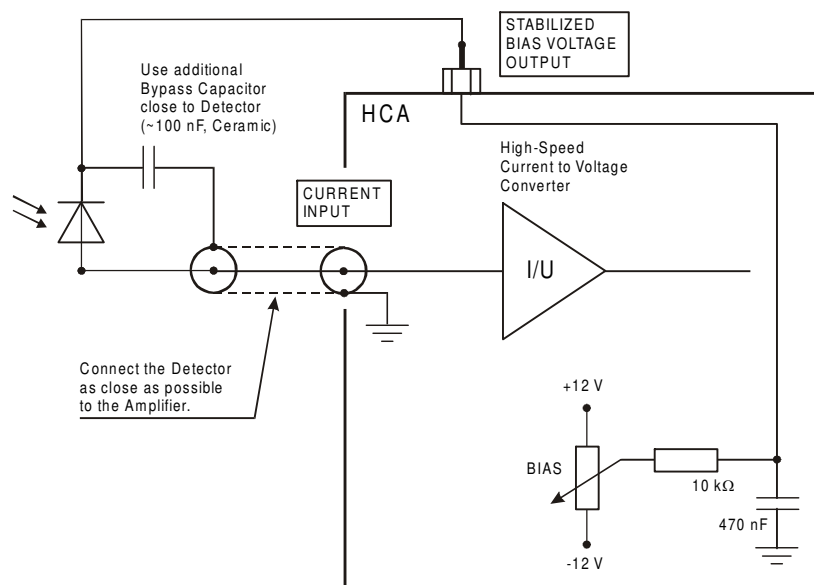
Connectors

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



Application Diagrams

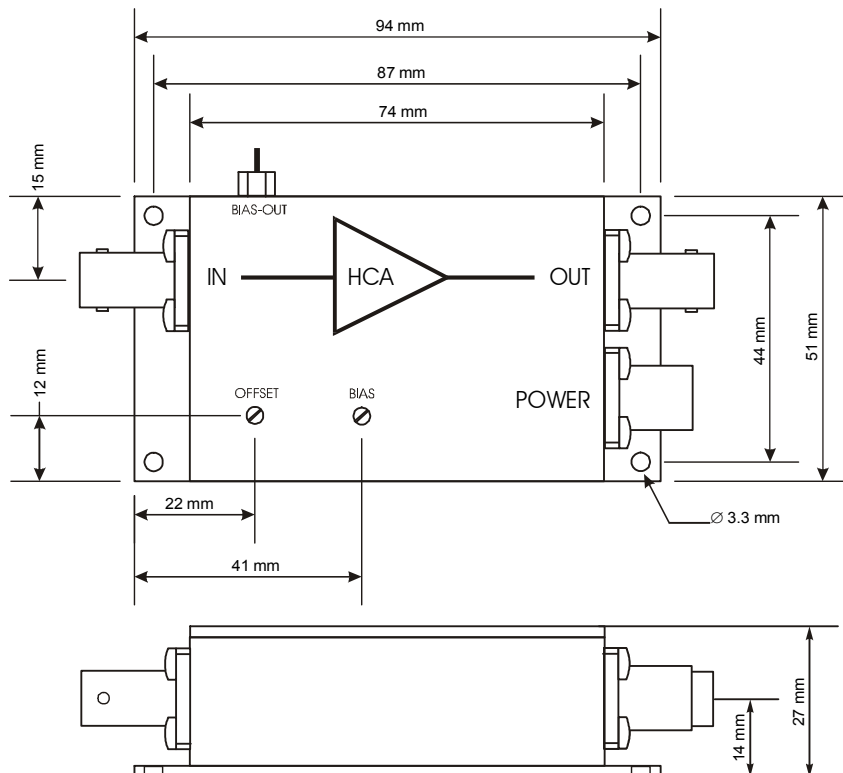
Photo Detector Biasing in Photoconductive Mode:
Best choice for high speed applications and optimum signal to noise performance.



AZ01-0201-20

High-Speed Current Amplifier

Dimensions



DZ01-0201-22

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