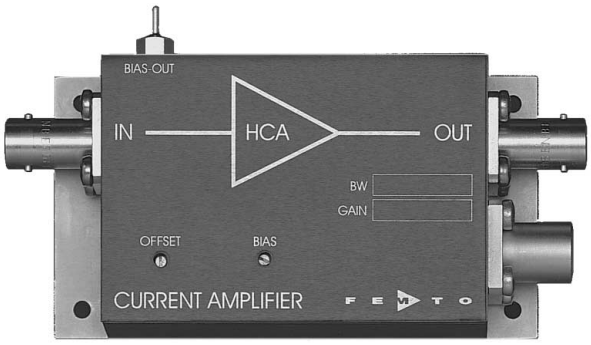
Datasheet HCA-1M-1M

High-Speed Current Amplifier



Features	• **Bandwidth and Frequency Response independent of Detector-Capacitance (up to 50 pF)** • **Low Noise, 270 fA/√Hz equivalent Input Noise Current** • **Bandwidth DC ... 1 MHz** • **Transimpedance (Gain) 1 x 10^6 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	1 x 10^6 V/A (50 Ω Load)
	Gain Accuracy	± 1 %
Frequency Response	Lower Cut-Off Frequency	DC
	Upper Cut-Off Frequency	1 MHz (- 3 dB)
	Rise- / Fall-Time	350 ns (10% - 90%)
	Gain Flatness	± 0.3 dB
Input	Equ. Input Noise Current	270 fA/√Hz (@ 10 kHz)
	Equ. Input Noise Voltage	6 nV/√Hz (@ 10 kHz)
	Input Bias Current	5 pA typ.
	Input Bias Current Drift	Factor 1.7 / 10 K
	Offset Current Compensation	± 2.7 µA, adjustable by Offset-Trimpot
	Max. Input Current	± 1.5 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

High-Speed Current Amplifier

Specifications (continued)

Temperature Range

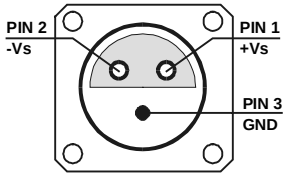
Storage Temperature	-40 ... +100 °C
Operating Temperature	0 ... +60 °C

Absolute Maximum Ratings

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

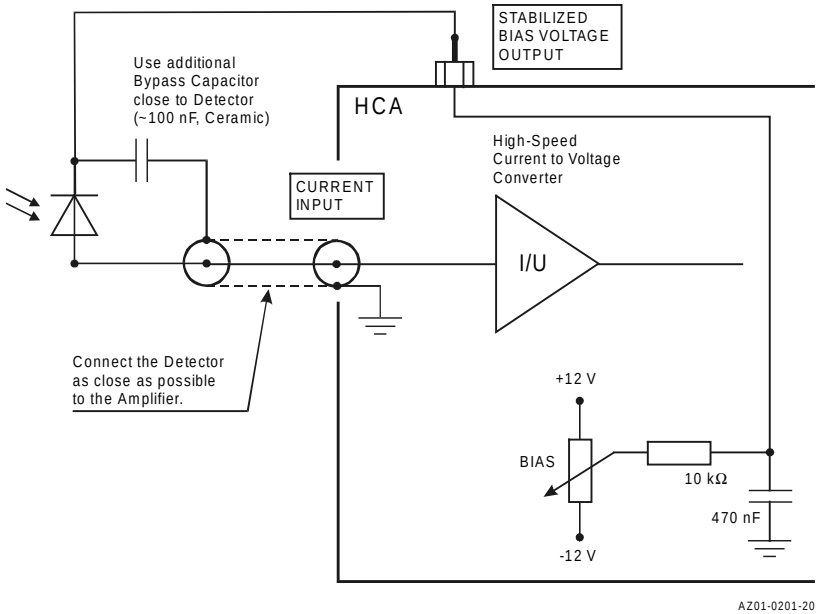
Connectors

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



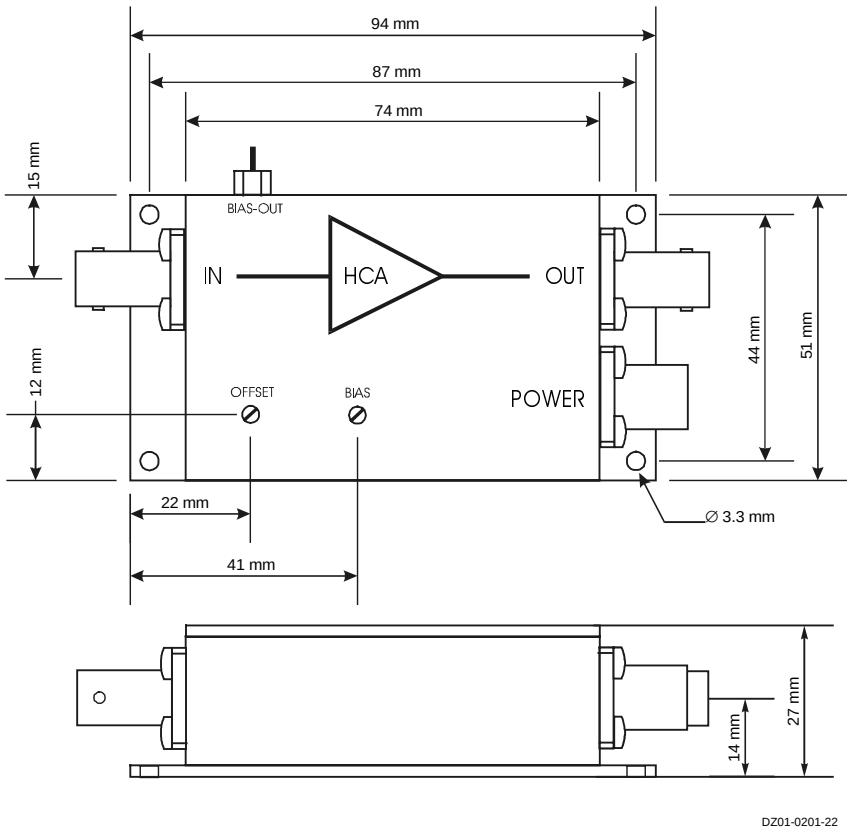
Application Diagrams

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



High-Speed Current Amplifier

Dimensions



FEMTO Messtechnik GmbH
Paul-Lincke-Ufer 34
D-10999 Berlin · Germany
Tel.: +49 (0)30 – 4 46 93 86
Fax: +49 (0)30 – 4 46 93 88
e-mail: info@femto.de
http://www.femto.de

Specifications are subject to change without notice. Information furnished herin is believed to be accurate and reliable. However, no responsibility is assumed by FEMTO Messtechnik GmbH for its use, nor for any infringement of patents or other rights granted by implication or otherwise under any patent rights of FEMTO Messtechnik GmbH. Product names mentioned may also be trademarks used here for identification purposes only.
© by FEMTO Messtechnik GmbH
Printed in Germany