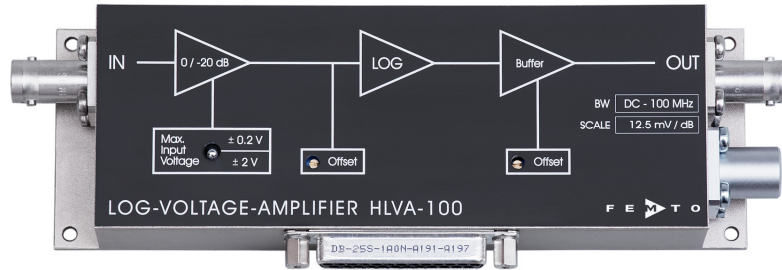


Logarithmic Wideband Voltage Amplifier



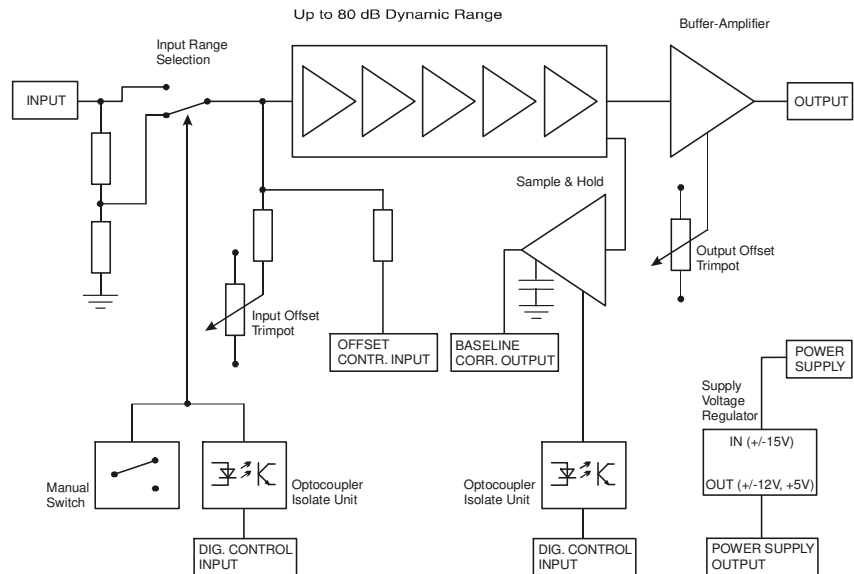
Features

- **Wide Dynamic Range** typ. 60 dB, max. 80 dB,
- **5 ns Rise/Fall Time @ 40 dB step**
- **Accuracy ± 1 dB @ pulse width of min. 20 ns**
- **Switchable Input Range** ± 20 μV ... ± 200 mV or ± 200 μV ... ± 2 V
- **DC coupled input**
- **Local and Remote Control**
- **Integrated Sample & Hold Baseline Correction**

Applications

- **LIDAR systems**
- **Signal Compression, Pulse Measurements**
- **Time-Resolved Pulse and Transient Measurements**
- **Mass Spectroscopy**
- **Particle Detection**

Block Diagram



BS01-0550-12

Logarithmic Wideband Voltage Amplifier

Specifications	Test Conditions	$V_s = \pm 15\text{ V}$, $T_a = 25^\circ\text{C}$, System Impedance = $50\ \Omega$
Dynamic Performance	Dynamic Range	typ. 60 dB (for accurate amplitude measurements) max. 80 dB (signal detection)
	Input Voltage Range	$\pm 20\ \mu\text{V} \dots \pm 200\ \text{mV}$ / $\pm 200\ \mu\text{V} \dots \pm 2\ \text{V}$ switchable
	Scaling	12.5 mV/dB equals 250 mV/ decade (@ $50\ \Omega$ Load)
	Linearity	$\pm 1\ \text{dB}$ (for pulse of min. 20 ns pulse width)
Pulse Response	Rise/Fall time	5 ns @ 40 dB step
Input	Input Impedance	$50\ \Omega$
	Input Voltage Drift	0.6 $\mu\text{V}/\text{K}$
	Equivalent Input Voltage Noise	2 nV/ $\sqrt{\text{Hz}}$
	Input BIAS Current	< 4 μA
	Input Offset Voltage	$\pm 2.5\ \text{mV}$, adjustable by Offset-Trimpot and external Control Voltage
Output	Output Impedance	$50\ \Omega$
	Output Voltage Range	+50 ... +1075 mV typ. (@ $50\ \Omega$ Load) (if Output is adjusted to 1V at 100mV Input)
	Output Offset Voltage Range	$\pm 500\ \text{mV}$, adjustable by Offset-Trimmer
Digital Control	Control Input Voltage Range	Low: - 0.8 ... + 0.8 V High: + 3 ... + 12 V, TTL / CMOS compatible
	Control Input Current	Low: 0 mA High: + 1.5 mA @ + 5 V (Input Range Control) + 7 mA @ + 5 V (Baseline Correction Control)
Baseline Correction	Acquisition Time	30 μs (min. sample pulse width)
	Baseline Hold Droop Rate	1 $\mu\text{V}/\text{s}$ (typ. @ 25°C)
	Loop cut-off frequency	1.5 kHz
Ext. Offset Control	Control Voltage Range	$\pm 10\ \text{V}$ (for $\pm 2.5\ \text{mV}$ Offset Control)
	Offset Control Input Impedance	100 k Ω
Power Supply	Supply Voltage	$\pm 15\ \text{V}$
	Supply Current	+ 90 / -120 mA typ.
	Stabilized Power Supply Output	$\pm 12\ \text{V}$ / max. 100 mA, + 5 V / max. 50 mA
Case	Weight	320 gr. (0.74 lbs)
	Material	AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature	- 40 ... + 100 $^\circ\text{C}$
	Operating Temperature	0 ... + 60 $^\circ\text{C}$
Absolute Maximum Ratings	Power Supply Voltage	$\pm 20\ \text{V}$
	Signal Input Voltage	$\pm 3\ \text{V}$ @ $\pm 2\ \text{V}$ Input Range Setting - 3 V / + 300 mV @ $\pm 200\ \text{mV}$ Input Range Setting
	Digital Control Input Voltage	+ 16 V / - 5 V

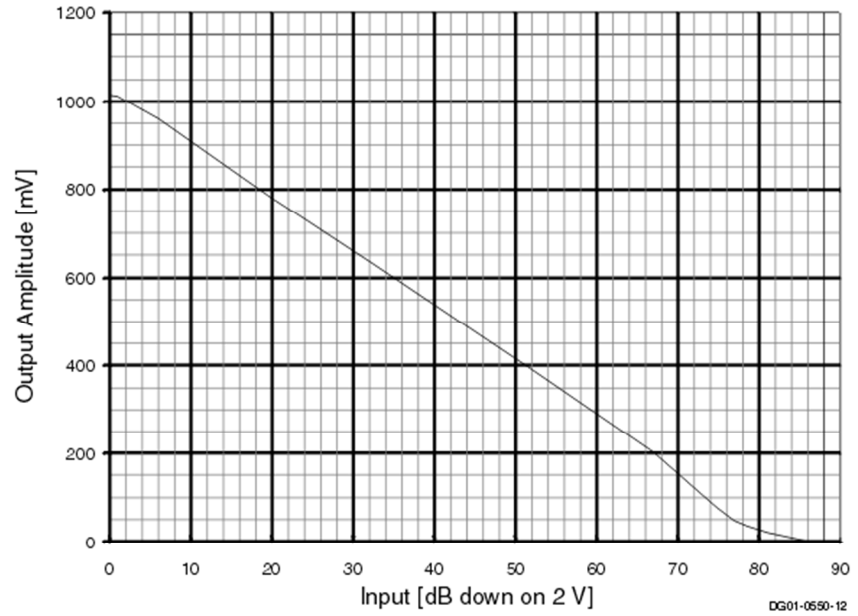
Logarithmic Wideband Voltage Amplifier

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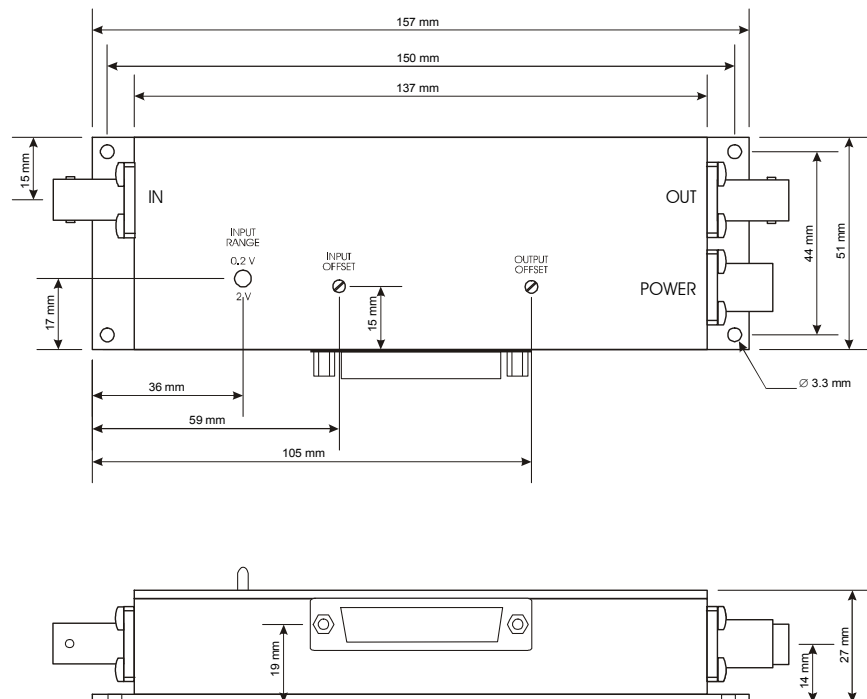
Logarithmic Wideband Voltage Amplifier

Typical Performance Characteristics

Logarithmic Response (@ ± 2 V Input Range Setting)



Dimensions



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