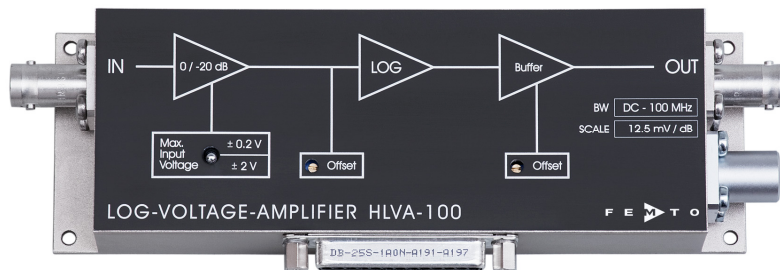


Logarithmic Wideband Voltage Amplifier



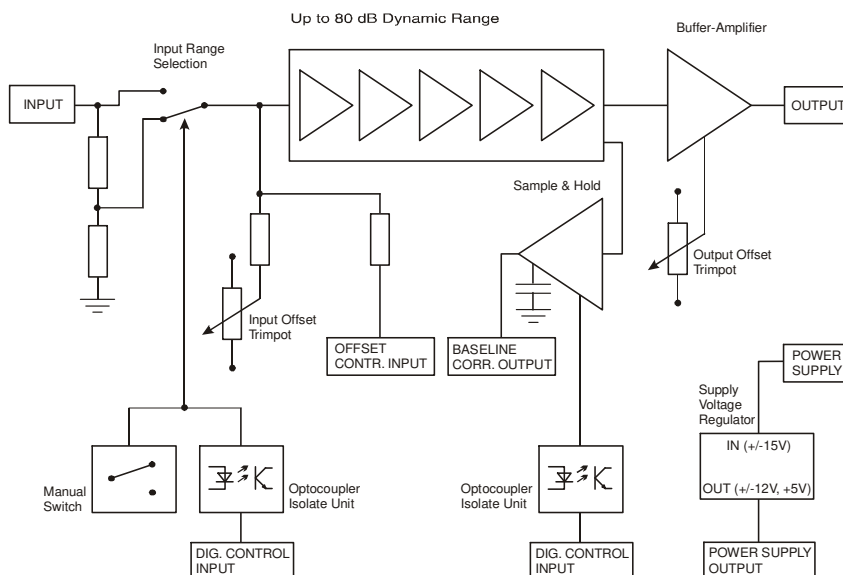
Features

- **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



BS91-0550-12

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 |

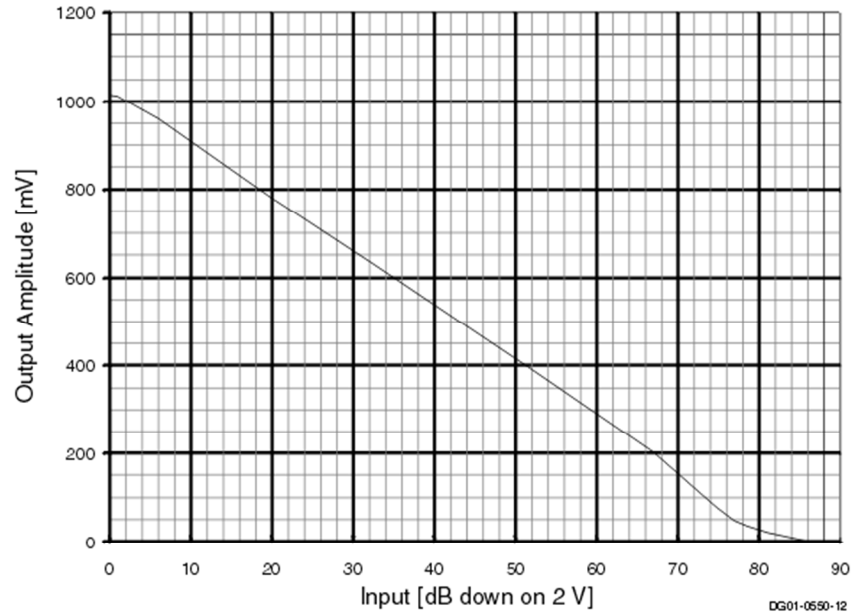
Logarithmic Wideband Voltage Amplifier

| | | | | | | | | | | | | | | | | | |
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| Connectors | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">Input</td> <td style="padding: 2px;">BNC</td> </tr> <tr> <td style="padding: 2px;">Output</td> <td style="padding: 2px;">BNC</td> </tr> <tr> <td style="padding: 2px;">Power Supply</td> <td style="padding: 2px;">LEMO Series 1S, 3-pin fixed Socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND</td> </tr> <tr> <td style="padding: 2px;">Control Port</td> <td style="padding: 2px;">Sub-D 25-pin, female, Qual. Class 2 Pin 1: +12V (Stabilized Power Supply Output) Pin 2: -12V (Stabilized Power Supply Output) Pin 3: AGND (Analog Ground) Pin 4: +5V (Stabilized Power Supply Output) Pin 5 - 6: NC Pin 7: Baseline Correction Output Pin 8: Offset Control Voltage Input Pin 9: DGND (Ground f. Digital Control Pin 10 - 25) Pin 10: Digital Control Input: Input Voltage Range Pin 11: Digital Control Input: Baseline Correction Pin 12 - 25: NC</td> </tr> </table> | Input | BNC | Output | BNC | Power Supply | LEMO Series 1S, 3-pin fixed Socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND | Control Port | Sub-D 25-pin, female, Qual. Class 2 Pin 1: +12V (Stabilized Power Supply Output) Pin 2: -12V (Stabilized Power Supply Output) Pin 3: AGND (Analog Ground) Pin 4: +5V (Stabilized Power Supply Output) Pin 5 - 6: NC Pin 7: Baseline Correction Output Pin 8: Offset Control Voltage Input Pin 9: DGND (Ground f. Digital Control Pin 10 - 25) Pin 10: Digital Control Input: Input Voltage Range Pin 11: Digital Control Input: Baseline Correction Pin 12 - 25: NC | | | | | | | | |
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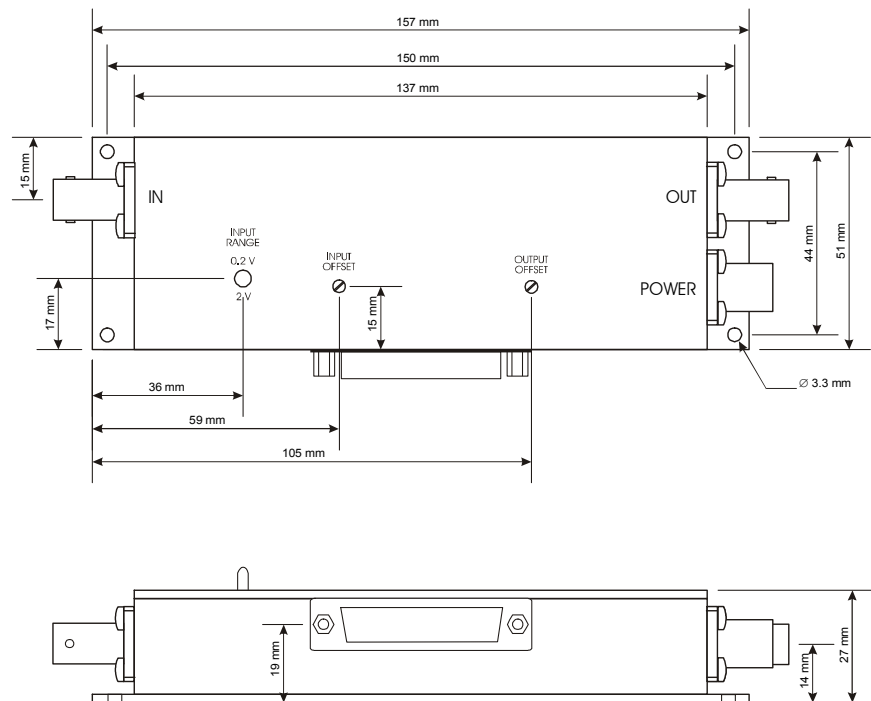
Logarithmic Wideband Voltage Amplifier

Typical Performance Characteristics

Logarithmic Response (@ ± 2 V Input Range Setting)



Dimensions



深圳众裕康科技有限公司
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