

LF-24/DC Low Frequency Velocity Sensor

- Patented Dual Compartment design incorporates electronics into the sensor
- Can be easily integrated into existing geophone enclosure product lines
- Extremely small dimensions compared to conventional 1Hz geophones
- Economic design for very low frequency vibration-monitoring applications
- Low power electronic circuit, provides an inverse-filter function below the geophone's natural frequency
- Bandwidths extended to 0.3 Hz or 1 Hz @ 100% damping
- Fully temperature compensated
- Damping characteristics unaffected by external load
- Low output impedance
- Rugged design allows for high shocks
- Available in vertical and horizontal versions
- Customized designs available to meet specific requirements



The LF-24/DC (Dual Compartment) Low Frequency Geophone has been designed to accommodate applications where the smallest form factor is required for vibration-monitoring and low-frequency seismic measurements. The device uses a low power electronic circuit to provide an inverse-filter function below the geophone natural frequency to compensate for the 12 dB/oct signal roll-off, extending the recording bandwidth.

This compensation circuit permits the use of a higher-natural frequency geophone, allowing for high impact shocks that could seriously damage conventional low frequency geophones. In addition, the circuit is fully temperature compensated to maintain its Damping and Sensitivity characteristics over the operating range.

Specifications for: LF-24/DC Low Frequency Velocity Sensor

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Frequency	
LF-24/DC 1Hz Natural Frequency	1 Hz
LF-24/DC 0.3Hz Natural Frequency	0.3 Hz
Tolerance	± 10%
Maximum tilt angle for specified Fn	Vertical type 10° Horizontal type 5°
Spurious frequency	>240 Hz (typically 280 Hz)
Distortion	
Distortion coil with 0,7 in/s p.p. coil to case velocity	Vertical <0.10% Horizontal <0.15%
Distortion measurement frequency	12 Hz
Damping	
Damping	100%

*All parameters specified at 20°C

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Sensitivity

Sensitivity	15 V/m/s (0.38 V/in/s)
Tolerance	± 10%
Equivalent input noise	300nm/s. sqrt(Hz) above 10 Hz
Power supply voltage	±11 to ±25V DC
Supply current	±2mA at 11V ±3mA at 15V ±6mA at 25V
LF-24/DC 1Hz Offset	4mV Max.
LF-24/DC 0.3Hz Offset	50 mV Max.

Physical Characteristics

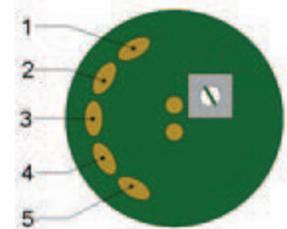
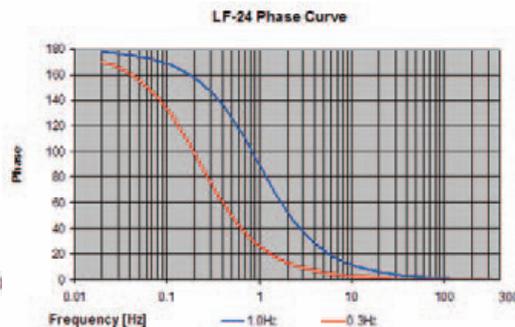
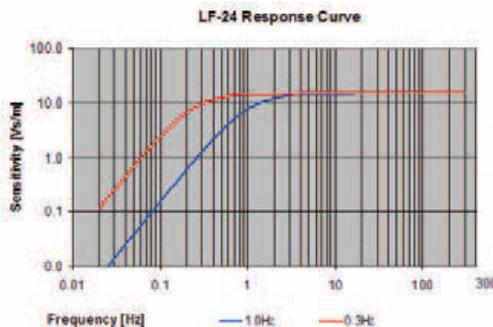
Diameter	25.4 mm (1.0 in)
Height	39.5 mm (1.55 in)
Weight	82.5 g (2.91 oz)
Shock survivability	981 m/s ² (100g) peak
Operating temperature range	-20°C to 60°C
Storage temperature range	-40°C to 70°C

Warranty

Warranty period	180 days
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Ordering information

LF-24/DC 0.3Hz Vertical	P/N 1100271
LF-24/DC 0.3Hz Horizontal	P/N 1100272
LF-24/DC 1Hz Vertical	P/N 1100281
LF-24/DC 1Hz Horizontal	P/N 1100282



Connector Pinning

- | | |
|--------------|-----------|
| 1 Signal + | 4 Power + |
| 2 Signal Gnd | 5 Power - |
| 3 Power Gnd | |

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ION has been a technology leader for over 50 years with a strong history of innovation. Leveraging innovative technologies, ION creates value through data capture, analysis and optimization to enhance companies' critical decision-making abilities and returns. Our offerings are focused on improving E&P decision-making, enhancing reservoir management and optimizing offshore operations.