SM-64 Low Frequency High Sensitivity Geophone

Features
- Small dimensions compared to equivalent transducers
- Facilitates use of bandwidth below its natural frequency
- Vertical and horizontal versions available
- Hermetically sealed case
- Integrated electronics
- Outstanding noise performance
- Low power electronic circuit
- Single power supply
- Low output impedance
- Electrical load does not affect damping characteristics

The extremely high sensitivity of the SM-64 coupled with very low noise electronics makes for an ideal sensor for passive seismic monitoring used in oil and gas exploration. The device can also be applied in earthquake monitoring and largely achieves the performance and bandwidth of traditional Broadband Seismometers at a fraction of the cost. The geophone is optimized for size and performance where weight and cost are an important factor. The novel patented (US 7518954) compartmentalized design allows the associated electronics to be incorporated within the sensor minimizing common-mode noise pick-up.

Specifications: SM-64 4.5Hz Low Frequency High Sensitivity Geophone

- **Frequency**
  - Natural Frequency: 4.5 Hz
  - Tolerance: ± 0.5 Hz
  - Maximum tilt angle for nominal Fn: Vertical type 10°, Horizontal type 2°
- **Distortion**
  - Distortion with 0.7 in/s p.p. coil to case velocity: Vertical type < 0.3%, Horizontal type < 0.3%
  - Distortion measurement frequency: 12 Hz
- **Intrinsic Damping**
  - 70%
- **Output**
  - Differential: 5V peak-to-peak differential
  - Impedance: 1300 Ω
- **Sensitivity**
  - Sensitivity: 4888 V/m/s (123.6 V/in/s)
  - Tolerance: ± 5%
  - Maximum coil excursion p.p.: 4 mm (0.16in)
- **Noise Performance**
  - From 4.5Hz to 1kHz: 1μV/√Hz
- **Power Supply**
  - Voltage: 7 to 40 VDC
  - Current: <8 mA at 12 VDC (no load)
**Physical Characteristics**

Diameter 25.4 mm (1.0”)
Height 44.4 mm (1.75”)
Weight 92.5 g (3.26 oz)

Operating temperature range -40°C to 85°C (-40°F to 185°F)
Storage temperature range -40°C to 85°C (-40°F to 185°F)

**Warranty**

Warranty period 180 days

**Note:**

Customized Natural Frequency and / or sensitivity available upon request

**Ordering information**

SM-64 UB 4.5Hz HSG - Vertical
P/N 1100551

SM-64 HB 4.5Hz HSG - Horizontal
P/N 1100552

**Connector Pinning**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Output +</td>
</tr>
<tr>
<td>2</td>
<td>Power -</td>
</tr>
<tr>
<td>3</td>
<td>Output -</td>
</tr>
<tr>
<td>4</td>
<td>Power -</td>
</tr>
<tr>
<td>5</td>
<td>Power +</td>
</tr>
</tbody>
</table>