

DHA-7

Downhole Hydrophone Array



GEOMETRICS
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The Model DHA-7 downhole hydrophone array is designed for high-resolution seismic borehole imaging. Unique, proprietary polymer hydrophones (no ceramics) are in-line molded to a fully integrated, triple-sealed multi-conductor cable. Non-shattering polymer material provides superior performance and durability under the rigors of borehole applications and a stable signal response up to 10 kHz. The Model DHA-7 is suited for use in cased and uncased, water-filled, narrow-diameter boreholes. Custom hydrophone group intervals and multi-borehole configurations are available to tailor the system to meet your needs. The array is easily deployed by hand or with a small winch.

The Model DHA-7 is backed by Geometrics, now in its 48th year of knowledgeable and prompt customer support.

FEATURES & BENEFITS

- **Only 41 mm (1.6 in) diameter** - Fits in any borehole.
- **Small bend radius** - Fits on small winch.
- **State-of-the-art hydrophones instead of geophones** - Coupling problems are eliminated in water-filled holes.
- **Small hydrophone spacings** - Image exceedingly small features, ideal for high-resolution tomography.
- **Light weight** - Easy transport and deployment.



Individually isolated hydrophone and preamp.



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ELECTRICAL

HYDROPHONE

Sensor type: Proprietary Polymer.

Sensors per group: One.

Frequency response: 10 Hz to 10,000 Hz \pm 1.0 dB.

Capacitance: 5 nF at 22°C.

Sensitivity: -197 dB re 1 Volt per 1 μ Pa.

Sensitivity with depth: < 1.0 dB over 400 m depth.

Sensitivity with acceleration: < -70 dB re 1 Volt per g.

PREAMPLIFIER

Type: Ultra-low noise differential.

Gain: 6 dB.

Current: 10 mA per channel.

Power: \pm 12V DC Model DHA Battery Pack on surface.

PHYSICAL

CABLE

Type: Multi-conductor with polyurethane jacket.

Termination

Topside: Y-type with one 61-socket connector (or 27-socket connector) and one 4-pin connector.

Tail: 1m (3.28ft) long with stainless steel swivel and 6 kg (13.2 lb) weight.

Maximum total length: 400 m (1,300 ft) (lead plus active section).

Strength member: Zylon center core.

Outside diameter: 13.5 mm (0.53 in).

Weight

12 channels: 0.12 kg/m (0.08 lb/ft).

24 channels: 0.15 kg/m (0.10 lb/ft).

Bend radius: 12.7 cm (5 in).

Working load: 273 kg (600 lb).

Breaking strength: 1,364 kg (3,000 lb).

ACTIVE SECTION

Channels: 12 or 24 standard; other counts available*.

Group Interval: 1 to 5 m (3 to 15 ft) standard; other intervals available with a minimum of 0.5 m (18 in)*.

Outside diameter (hydrophone): 41.3 mm (1.63 in).

Length (hydrophone): 30.5 cm (12 in).

Weight (hydrophone): 0.16 kg (0.35 lb).

Bend radius: 22.9 cm (9 in).

ENVIRONMENTAL

DEPTH

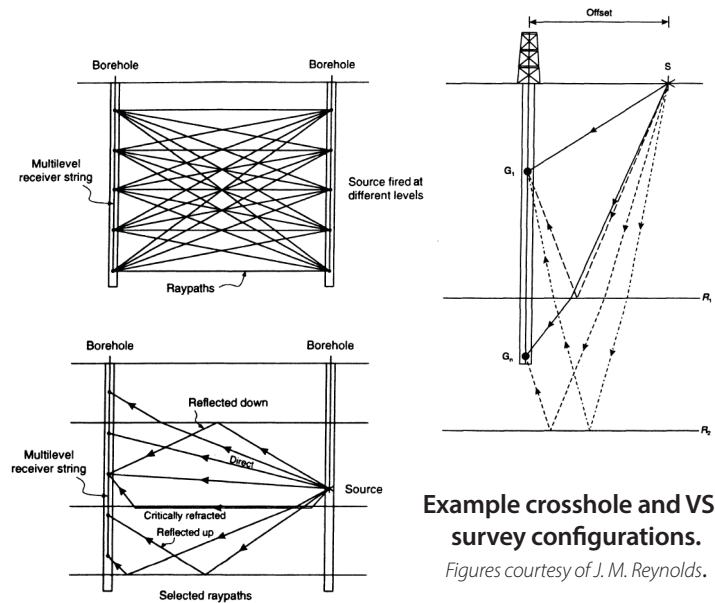
Operating maximum: 400 m (1,300 ft).

TEMPERATURE

Operating range: -10°C to +70°C (+14°F to +158°F).

Storage range: -40°C to +70°C (-40°F to +158°F).

*Please contact the factory to discuss your requirements.



Example crosshole and VSP survey configurations.

Figures courtesy of J. M. Reynolds.

Specifications subject to change without notice. DHA-7_v1 (0723)