

# Hydrophones

*Oil and gas/  
seismic discovery  
and exploration*

*Hydrophone  
elements*



*Preamplifiers*



*Molded units*



**B**enthos hydrophones have proven invaluable in locating promising oil and gas reserves. The company's hydrophone products are also used by the military to detect submarines and other vessels under, and on the surface of the ocean. Benthos also supplies hydrophones to research institutions where they are used for various purposes, such as listening to marine animals.



**TELEDYNE BENTHOS**

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# Hydrophones

## HYDROPHONE ELEMENTS



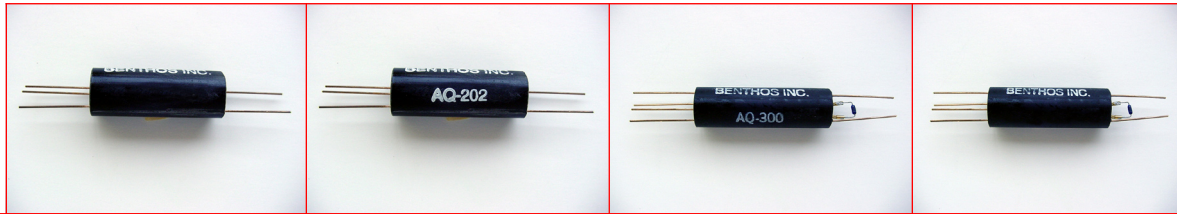
SPECIFICATIONS	<u>Geopoint</u>	<u>Geopoint Export</u>	<u>AQ-2000</u>	<u>AQ-1</u>
Suggested application	Seismic arrays	Seismic arrays, meets export restrictions	Seismic arrays, ocean bottom cables, general purpose	Seismic arrays, ocean bottom cables, general purpose
Sensitivity (dBv re 1 uPa @ 20 C)	-194	-194	-201	-201
Sensitivity (V/Bar @ 20 C)	20	20	8.9	8.9
Capacitance (nF @ 20 C)	16	16	4.5	14.5
Frequency Response (+/- 1.5 dB)	1 Hz to 1 kHz	1 Hz to 500 Hz	1 Hz to 10 kHz	1 Hz to 10 kHz
Depth (meters)	200	200 (Cutoff at 35 m maximum)	2000	1732
Length (cm)	5.1	6.5	4.6	4.5
Diameter (cm)	1.7	2.3	1.65	1.6
Weight (g)	25.0	33.0	14.0	17.3
Leads	Two AWG 26	Two AWG 26	Two AWG 28	Solder pins

					
<u>AQ-16</u>	<u>AQ-4</u>	<u>RAFOS-1</u>	<u>RAFOS-2</u>	<u>AQ-17</u>	<u>AQ-18</u>
Seismic arrays, ocean bottom cables, general purpose	Seismic arrays, ocean bottom cables, general purpose	Bulkhead mount, instrument housings	Bulkhead mount, instrument housings	Gen. purpose preamplified hydrophone, scientific, noise monitoring	Gen. purpose preamplified hydrophone, scientific, noise monitoring
-195	-201	-201	-195	-175.5	-171
17.8	8.9	8.9	17.8	168	282
3.5	2.4	14.5	3.5	N/A	N/A
1 Hz to 10 kHz	1 Hz to 15 kHz	1 Hz to 10 kHz	1 Hz to 10 kHz	1 Hz to 10 kHz	1 Hz to 10 kHz
1732	3300	1732	1732	1732	1732
4.5	3.3	7.0	7.0	15.6	15.6
1.6	1.3	1.6	1.6	2.54	2.54
17.3	4.0	25	25	N/A	N/A
Solder pins	Solder pins	Solder pins	Solder pins	Two conductor shielded cable	Two conductor shielded cable



# Hydrophones

## PREAMPLIFIERS



<u>SPECIFICATIONS</u>	<u>AQ-201</u>	<u>AQ-202</u>	<u>AQ-300</u>	<u>AQ-302</u>
Suggested use	High impedance voltage preamplifier	Lower noise version of AQ-201	High impedance differential voltage preamplifier	Lower noise version of AQ-300
Gain (dB)	26	26	20.8	20.8
Input Impedance (Mohms)	15	15	30	30
Current (Quiescent) (mA @ 12 VDC)	0.3	4.0	0.6	6.0
Input referred noise (nV rt Hz)	<100	<20	<100	<20
Band pass	1 Hz to 12 kHz	1 Hz to 12 kHz	1 Hz to 14 kHz	1 Hz to 14 kHz
Depth (meters)	1732	1732	1732	1732
Length (cm)	4.45	4.45	5.7	5.7
Diameter (cm)	1.74	1.74	1.65	1.65
Weight (g)	17.4	17.4	17.1	17.1

Other options and configurations available. Please call for details.

## HYDROPHONE ARRAYS



- Small single or 2-channel, multi-element streamer (MESH) arrays.
- MESH battery unit to power and decouple AQ-17, AQ-18 and MESH array



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