Teledyne Marine Hydrophones

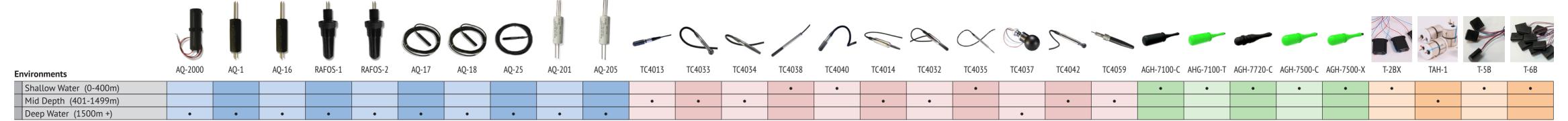








Find Your Perfect Hydrophone



TELEDYNE BENTHOS

Proven hydrophones that are invaluable in locating promising oil and gas reserves, and used by many research institutions for various other purposes.

- HYDROPHONE ELEMENTS -

	1				
SPECIFICATIONS	AQ-2000	AQ-1	AQ-16	RAFOS-1	RAFOS-2
Suggested Applications	Seismic arrays, ocean bottom cables, general purpose	Seismic arrays, ocean bottom cables, general purpose	Seismic arrays, ocean bottom cables, general purpose	Bulkhead mount, instrument housings	Bulkhead mount, instrument housings
Sensitivity (dBv re 1 uPa @ 20 C)	-201	-201	-196	-201	-196
Sensitivity (V/Bar @ 20 C)	8.9	8.9	15.8	8.9	15.8
Capacitance (nF @ 20 C)	4.5	14.5	3.5	14.5	3.5
Frequency Response	1 Hz to 10 kHz	1 Hz to 10 kHz	1 Hz to 10 kHz	1 Hz to 10 kHz	1 Hz to 10 kHz
Operating Depth (meters)	2000	1732	1732	1732	1732
Dimensions (cm)	1.65 (ø) x 4.6 (l)	1.6 (ø) x 4.5 (l)	1.6 (ø) x 4.5 (l)	1.6 (ø) x 7.0 (l)	1.6 (ø) x 7.0 (l)
Weight (g)	14.0	17.3	17.3	25.0	25.0
Leads	Two AWG 28	Solder pins	Solder pins	Solder pins	Solder pins

- MOLDED HYDROPHONES

SPECIFICATIONS	AQ-17	AQ-18	AQ-25 Broadband
Suggested Application	General purpose preamplified hydrophone, scientific, noise monitoring	General purpose preamplified hydrophone, scientific, noise monitoring	General purpose preamplified hydrophone, scientific, noise monitoring
Sensitivity (dBv re 1 uPa @ 20 C)	-176	-172	-172
Sensitivity (V/Bar @ 20 C)	158	250	250
Capacitance (nF @ 20 C)	N/A	N/A	N/A
Frequency Response	5 Hz to 10 kHz	7 Hz to 10 kHz	2 Hz to 90 kHz
Operating Depth (meters)	1732	1732	1500
Dimensions (cm)	2.22 (ø) x 16.5 (l)	2.22 (ø) x 16.5 (l)	2.54 (ø) x 15.9 (l)
Weight (g)	N/A	N/A	N/A
Leads	Two conductor, shielded cable - 25ft	Two conductor, shielded cable - 25ft	Three conductor, shielded cable

	T READITERS	
SPECIFICATIONS	AQ-201	AQ-205
Suggested Application	High impedance voltage preamplifier	Wide band hydrophone preamplifier
Gain (dB)	26	30
Input Impedance	15	40
Current (Quiescent) (mA @ 12 VDC)	0.3	<6.0
Input Referred Noise (nV rt Hz)	<100	<20
Band pass*	5 Hz to 12 kHz*	1.7 Hz to 90 kHz*
Operating Depth (m)	1732	1500
Dimensions (cm)	1.3 (ø) x 3.5 (l)	1.3 (ø) x 3.5 (l)
Weight (g)	17.1	17.1

TELEDYNE RESON

Precision reference hydrophones, projectors and accessories for subsea acoustic measurements, signal detection and/or reference acoustic projection.

HYDROPHONES WITHOUT INTERNAL PREAMPLIFIERS							
SPECIFICATIONS	TC4013	TC4033	TC4034	TC4038	TC4040	TC4059	
Useable Bandwidth	1 Hz to 170 kHz	1 Hz to 140 kHz	1 Hz to 470 kHz	50kHz to 800kHz (>1MHz)	1 Hz to 120 kHz	1 Hz to 480 kHz	
Receive Sensitivity (dB re. 1V/uPa)	-211	-203	-218	-228	-206	-213	
Transmit Sensitivity at Resonance (dB re. 1 uPa/V at 1m)	130dB ±3dB re µPa/V at 1m at 100kHz	144dB	122dB	138dB	132dB	N/A	
Operating Depth (m)	700	900	900	20	400	900	
Dimensions (mm)	10 (ø) x 63 (l)	25 (ø) x 138 (l)	16 (ø) x 138 (l)	4 (ø) x 58 (l)	21 (ø) x 116 (l)	19 (ø) x 100 (l)	

HYDROPHONES WITH INTERNAL PREAMPLIFIERS							
SPECIFICATIONS	TC4014	TC4032	TC4035	TC4037	TC4042		
Useable Bandwidth	15 Hz to 480 kHz	5 Hz to 120 kHz	10 kHz to 800 kHz	1 Hz to 100 kHz	5 Hz to 85 kHz		
Receive Sensitivity (dB re. 1V/uPa)	-186 (-180 differential)	-170 (-164 differential)	-214	-193	-173 (-167 differential)		
Transmit Sensitivity at Resonance (dB re. 1 uPa/V)	N/A	N/A	N/A	N/A	N/A		
Operating Depth (m)	900	600	300	>2000m	1000m		
Dimensions (mm)	38 (ø) x 273 (l)	38 (ø) x 285 (l)	10 (ø) x 170 (l)	36 (ø) x 75 (l)	36 (ø) x 220 (l)		

HYDROPHONE ACCESSORIES							
TC4013	TC4033	TO	C4034	TC403	8	TC4040	TC4059
EC6081 MK2 Voltage Prean	nplifier with Band	d Pass Filter	rs			EC6067 Condition	n Charge Amplifier
Hi-Pass filters 1Hz-250kHz Lo-Pass filters 1kHz-1MHz Output gain 0-50dB 1MHz Bandwidth 24VDC 100M-Ω input / 10 Ω output Splash proof and portable	out impedance	т	C4032	TC403	• Inpu • Outp • 1MH • 12-2 • 3.3Ω • Spla	stable input capacitano t resistance settings se ut gain 0-32dB z Bandwidth 4VDC t to 16Ω input / 20Ω o sh proof and portable	t to Hi-Pass filters
EC6073 Ir	put Module					EC6070 Aud	dio Amplifier
Hassel-Free Plug-and-Play Provides input for 7-pin fe Provides inout for LEMO (4 Live level signal output in Input for VDC to power the Input for calibration tone Splash proof and portable,	male Jupiter I pin) a BNC e preamplifier	ided			Built-BandsTotalHi-PaBuilt-	amplifier for monitoring u in envelope sonar detector width up to 700kHzHi-Pass signal amplification up to ⁹ ss filtering in landspeaker and headph (Output via BNC and MMI j	s filtering 90dB none amplifier
dule for Preamplifiers		EC6072	2 Battery Ch	arger for Prean	nplifiers	;	EC6069 Dry-Cell Batte

Every Teledyne RESON hydrophone leaving production is individually calibrated. Teledyne RESON provides calibrations consistent with international standards established at the National Physical Laboratory, UK.

TELEDYNE AG GEOPHYSICAL

Rugged high pressure hydrophones providing reliable connectivity and guaranteed performance in high shock marine environments.

MARINE SOURCE HYDROPHONES							
SPECIFICATIONS	AGH-7100-C	AGH-7100-T	AGH-7720-C	AGH-7500-C	AGH-7500-X		
Suggested Applications	Seismic source firing and control systems						
Sensitivity (dBv re 1uPa @ 20C)	-203	-212	-202	-204	-204		
Sensitivity (V/Bar @ 20C)	7	2.5	7.5	6	6		
Capacitance (nF @ 20C)	9.1	9.1	13	13	13		
Frequency Response	5 Hz to 300 Hz	5 Hz to 300 Hz	10 Hz to 300 Hz	1 Hz to 1000 Hz	1 Hz to 1000 Hz		
Operating Depth (m)	25	25	25	25	25		
Dimensions (mm)	59 (ø) x 281 (l)	59 (ø) x 281 (l)	38 (ø) x 193 (l)	43 (ø) x 190 (l)	43 (ø) x 190 (l)		

TELEDYNE GEOPHYSICAL INSTRUMENTS

Reliable marine geophysical exploration hydrophones designed to meet the specific needs of military, research and commercial end users.

HYDROPHONES								
SPECIFICATIONS	T-2BX	TAH-1	T-5B	T-6B				
Suggested Applications	Seismic streamers and towed arrays							
Sensitivity (dBv re 1uPa @ 20C)	-194.0	-190.6	-206.6	-194.0				
Sensitivity (V/Bar @ 20C)	20.0	29.3	4.7	20.0				
Capacitance (nF @ 20C)	16	0.589	8	16				
Frequency Response	1 Hz to 5000 Hz	1 Hz to 40000 Hz	1 Hz to 5000 Hz	1 Hz to 5000 Hz				
Operating Depth (m)	100	1000	300	100				
Dimensions (mm)	35 (w) x 35 (l) x 15 (h)	13.4 (ø) x 20 (l)	15 (w) x 15 (l) x 7 (h)	24 (w) x 24(l) x 8 (h)				

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Teledyne Marine Hydrophones

Teledyne Marine manufactures a broad range of hydrophones. From oceanographic research to monitoring industrial processes, we have a range of hydrophones for reference measurement, reference projectors, passive arrays, positioning systems and tracking systems. And if you cannot find the right hydrophone from our extensive offering, we'll work with you to develop a solution that meets your specific needs.

Applications



NAVAL

- Acoustic signature analysis
- Ship, flow, turbulance noise measurements
- Low signal-level detection
- Acoustic tracking
- Range arrays



SEISMIC SURVEYS

- Seismic exploration
- Ambient measurements
- Environmental measurements



ACOUSTIC RESEARCH

- Acoustic telemetry
- Underwater acoustic measurements
- Marine biological research
- Whale audio recording
- Dolphin echo-location research
- Near and far field acoustic measurements



UNDERWATER INSTRUMENTATION

- Acoustic telemetry
- Offshore structure monitoring
- Underwater positioning / navigation

A Sea of Solutions

From the surface to the seafloor...

Teledyne Marine is a group of leading-edge undersea technology companies that have been assembled by Teledyne Technologies Incorporated. Through acquisitions and collaboration, over the past twelve years Teledyne Marine has evolved into an industry powerhouse, bringing the best of the best together under a single umbrella. Each Teledyne Marine company is a leader in its respective field, with a shared commitment to providing premium products backed by unparalledled service and support.

In keeping with Teledyne's philosophy, the member companies within the Teledyne Marine Group remain committed to their technical heritage; however, they are now able to leverage and combine their talents and technology to provide their customers with a new level of collaborative technology, innovation, and worldwide support via their OneTeam approach.





 $Specifications \ subject to \ change \ without \ notice. \\ © 2018 \ Teledyne \ Marine \ and \ Teledyne \ RESON \ A/S \ All \ rights \ reserved. \ TMHY/0618/V1$

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