



# digitalHyd SR-1

*USER-FRIENDLY RECORDING OF UNDERWATER SOUND*

A compact autonomous acoustic recorder for a broad range of applications.

*Underwater Noise Monitoring*  
*Bioacoustics of Marine Mammals*  
*Underwater Acoustics Research*  
*Underwater Vehicle Payload*



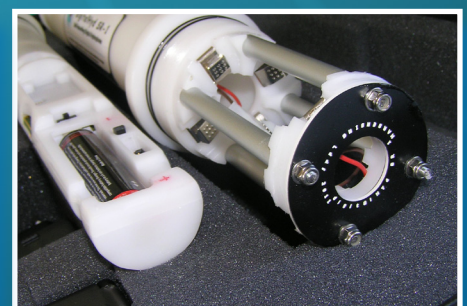
**Small size**  
50mm x 323mm (DxL)  
**Data Storage**  
Removable memory  
(up to 128 Gbyte)  
**Autonomy**  
12h of continuous  
acquisition  
Extended operation time  
(optionally)  
**Programmable**  
Acquisition scheduling

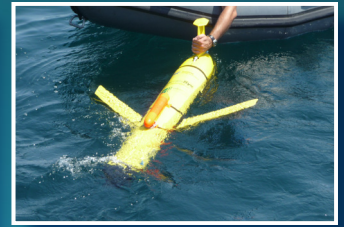
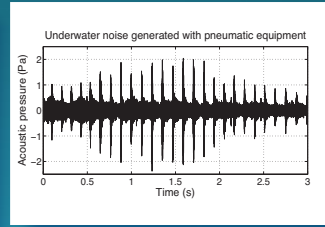
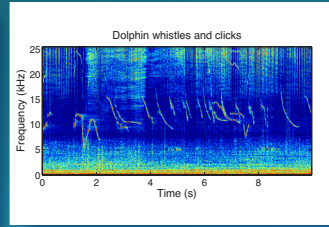
**Compact** autonomous underwater acoustic recording device.

**User-friendly** operation: easy programming, deployment, and recovery.

**Versatile** application: use in moored or tethered configurations.

Ideal for implementing **efficient** multi-position monitoring strategies.





## DESCRIPTION

The digitalHyd SR-1 is a compact autonomous hydrophone designed for versatility and easy application. Its small size allows for easy use in moored or tethered configurations, or as a payload in underwater vehicles.

## REFERENCES

**READ** P. Felisberto, S. M. Jesus, F. Zabel, et al. *Acoustic monitoring of O2 production of a seagrass meadow*. Journal of Experimental Marine Biology and Ecology. Vol. 464, pages 75-87. March 2015.

**READ** A. Silva, A. Matos, C. Soares, J. Alves, J. Valente, F. Zabel, et al. *Measuring underwater noise with high endurance surface and underwater autonomous vehicles*. OCEANS'13 MTS/IEEE Conference, San Diego, USA. 23-27 September, 2013.

**READ** C. Soares, E. Cruz, F. Zabel and A Moura. *Environmental Inversion with an Autonomous Hydrophone in a Wave Energy Device Deployment Site*. In Proc. Underwater Acoustics Conferences 2014. Island of Rhodes, Greece. 22-27 June, 2014.

**READ** C. Soares, A. Pacheco, F. Zabel, et al. *Baseline assessment of underwater noise in the Ria Formosa*. Marine Pollution Bulletin. Volume 150. 2020.

## FEATURES

This device features a wide range of configurations, including selectable sampling frequencies and amplitude resolution, programmable sensitivity, start-up times and file duration, among others. The received acoustic data is stored on a removable memory card, in WAV format, which stores also all configuration parameters for usage during data analysis. The acoustic data files can be open and processed with free open source software such as **PamGuard** and **Audacity**. The device is configured through a USB interface with access compatibility from various types of operating systems.

The digitalHyd SR-1 is powered by a rechargeable lithium-ion battery and is able to remain on for up to 12 hours of continuous acquisition, or various days in stand-by. Battery and memory card are field replaceable, to allow for quick redeployments of the hydrophone. Optional battery extension packs are available on demand, for expanding the SR-1 to the user required autonomy.

**rechargeable  
Battery Extensions**  
5PACK - 3.7VDC, 17Ah  
10PACK - 3.7VDC, 34Ah  
15PACK - 3.7VDC, 51Ah

## SPECIFICATIONS

**Sample Frequency**  
52.734 kHz / 105.469 kHz (selectable)  
**Sample Resolution**  
24 bits.

**Usable Acoustic Band**  
1 Hz to 25.8 kHz / 1 Hz to 51.6 kHz

**Receive sensitivity**  
-162.2 to -126.1 dB re 1 V/uPa

**Programmable Gain Amplifier**  
1x, 2x, 4x, 8x, 16x, 32x, 64x  
**Input Sound Pressure Level Range**  
46.3 dB re 1 uPa to 172.5 dB re 1 uPa

**Memory Card Capacity**  
up to 256GB (field replaceable)

**Battery**  
3.7VDC, 3600mAh, Lithium-Ion 18650

**Battery Life**  
● up to 20h in continuous acquisition;  
● up to 750h in stand-by.  
● expandable with larger battery packs.

**Operation depth**  
Up to 100 m.

**Case dimension**  
50 x 323 mm (diameter x length)

**Case Material**  
Delrin

**Weight**  
0.18 kg (in water), 0.77 kg (in air)

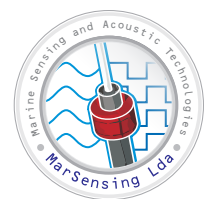
**Real Time Clock**  
Precision of ± 64 seconds per year

**Operation Temperature Range**  
0 °C to 40 °C



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