

DigitalHyd TP-1 -Digital ethernet hydrophone

Institution/Company name	MarSensing Lda.
Contact details	Centro Empresarial de Gambelas Universidade do Algarve, Campus de Gambelas, Pavilhão B1, 8005-139 Faro, Portugal Cristiano Soares contact@marsensing.com (+351) 913729660
Website	http://www.marsensing.com

□ Key words

Communications - Data management - Sensors / instrumentation / electronics - Software engineering / development

□ Description

Digital hydrophone suitable for integration in existing platforms. Real-time applications: use in tethered or system integrated configurations. Configurable for real-time onboard data analysis. Ideal for long-term monitoring.

The digitalHyd TP-1 is an **acoustic acquisition device designed for real-time streaming of digital data for remote storage, processing, and/or visualisation**. This device has internal processing capabilities allowing, alternatively, to stream results such as spectral analysis.

The TP-1 hydrophone is ideal for integration into monitoring buoys or readily existing systems, or it can be connected directly to a computer.

This digital hydrophone features a pre-amplifier combined with a programmable gain amplifier (PGA) with 7 different gains, for convenient adjustment of the overall sensitivity according to expected incoming signals' amplitudes.





The device is equipped with an analog-to-digital converter with a wide range of selectable sampling rates up to 312500 samples per second at 24 bits. The TP-1 is a telemetry based hydrophone which features a 10/100 MBit/s ethernet interface, which allows direct connection to a computer, or to a wired or wireless network for real-time data streaming to a client that can handle the acoustic data for storage, processing, and/or visualisation. A power/ethernet cable for power supply and two-ways communications can be supplied.

The TP-1 digital hydrophone has internal processing capabilities, where FFT based data analysis can be carried out and results can be made through a low-speed serial link. It features various configurations, including selectable sampling frequencies, programmable sensitivity, and acoustic data processing modes.

Specifications:

- Sample Frequency: 36.3, 67.8, 78.1, 119.8, 180.2, 156.3, 312.5 ksp/s (selectable)
- Sample Resolution: 24 bits
- Usable Acoustic Band: 1 Hz to 150 kHz
- Receive sensitivity: -165 to -129 dB re 1 V/uPa at 80 kHz (1x gain)
- Programmable Gain Amplifier: 1x, 2x, 4x, 8x, 16x, 32x, 64x
- Input Sound Pressure Level Range: Up to 200 dB re 1 uPa
- Power Supply: 12 to 24 VDC
- Operation depth: Up to 100 m
- Case dimension: 60 x 310 mm (diameter x length)
- Case Material: Delrin
- Weight: 0.5 kg (in water), 1 kg (in air)
- Operation Temperature Range: 0 °C to 40 °C

Applicability of Technology to Maritime SMES

