UltraLab ULS HF-Series · HF54 · HF58 · HF516 · HF532 · HF104 · HF108 · HF1016 · HF1032

UltraLab ULS HF-Series

Sophisticated Level and Wave Measurements for Labs

The UltraLab HF532 controller shown on the left is the 32 channel 50Hz version of the UltraLab HF-series. A set of suitable USS sensors is pictured below.

The UltraLab ULS HF-series is a high speed, calibration-free measurement system based on General Acoustics' innovative ultrasound technology. The systems are optimized for challenging remote sensing applications in hydraulic laboratories and towing tanks. The very high reliability in combination with outstanding performance enable highly efficient and cost-effective measurements. Additionally, sophisticated signal processing for false and lost echo cancelation leads to outstanding performance at high-speed measurements.

The UltraLab ULS HF enables resource-efficient and reliable measurements even at steep and fast waves with a relative velocity up to 6 m/s. The controller comes with 4, 8, 16, or 32 independent, but fully-synchronized channels for a maximum flexibility at the selection of measurement points. 2 sensors per channel provide reliable measurements at even higher speeds and steeper waves. The systems are available with a sample rate of either 50Hz or 100Hz. The systems are a perfect match for stationary measurement of dynamic processes in an impressive resolution of 0.18 mm (for measurement ranges up to 350 mm).

Because of the integrated high precision sound velocity measurement, the high accuracy can be guaranteed, even at changing ambient conditions. The UltraLab ULS HF is equipped with a RS232 interface. Optional, a LAN-interface realise the reception of the output data stream at any PC in a local network. Additionally, a trigger input is implemented for time synchronisation with external measurement- and data acquisition systems.

Applications

- stationary measurements in wave channels, towing tanks, flood- and
- surface water models for:
- fast analysis of waves, wave fields and water levels
- fast recording of topographic contours in models

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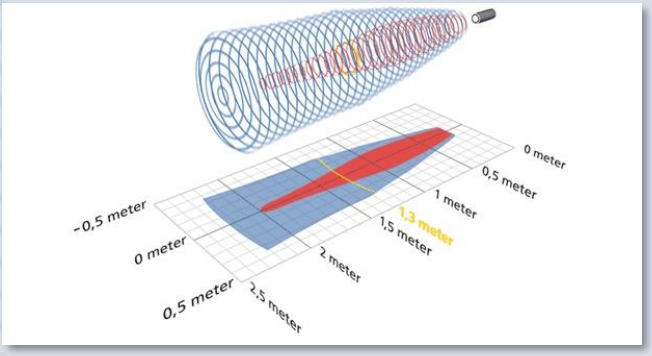
UltraLab Technology

Narrow Beam Sensor Technology

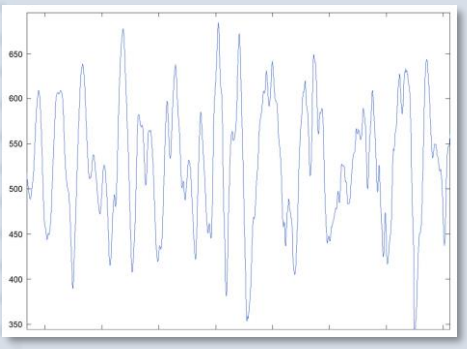


The General Acoustics ultrasonic sensors feature exceptionally narrow beams to accomplish a high spatial resolution. Shown here is the beam of the USS 13-HF sensor

Reference Measurement

A dedicated speed of sound measurement cancels all influences of temperature and humidity, enabling a fully calibration-free measurement operation.

Exemplary Results



An irregular wave field captured from a carrier moving at 6 m/s at the Maritime Inst. of the Netherlands (MARIN):

Second Sensor Option

The addition of a second sensor to every channel enables towed measurements and the detection of irregular waves. The second sensor strictly acts as an additional receiver.

Specifications

- Measurement range: 20 cm up to 10 m
- Superior resolution: down to 0.18 mm
- Sample rate: 50 Hz or 100 Hz
- Power supply: 230 V (110 V optional)
- Data format: direct readable ASCII with time stamp, (external TTL signal triggered)
- Remote operation through LAN or RS232
- Windows software for viewing in real-time, logging, remote control and data export
- Standard 10m cables, longer on request
- Optional additional analogue output (0-10V)

PTP-Synchronization

PTP-Synchronization enables the connection of multiple controllers to perform fully synchronized. PTP-Client and Grandmaster are utilized to connect two UltraLab HF units here.

Scope of UltraLab Systems

- up to 64 UltraLab USS sensors (depending on controller model)
- 1 Controller unit with 4, 8, 16 or 32 independent, synchronized channels
- 1 Sensor REF-302 for precise sound velocity compensation

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