

# UltraLab<sup>®</sup> ULS HF5-A

## High Resolution Wave Measurement



The HF5-A can connect up to 4 Ultrasound Sensors of the type USS 13/HF



The **UltraLab<sup>®</sup> ULS HF5-A** is a high precision measuring system based on ultrasound technology for towing tanks and hydraulic laboratories.

The **UltraLab<sup>®</sup> ULS HF5-A** is dedicated for sound propagation time measurement of very fast moving waves. This device has four independent channels, each one can be equipped with an ultrasound sensor of the type USS13-HF. The data output is realised in analogue voltage signal between 0-10 Volt and digital via serial interface RS 232.

Due to high repetition rate of 50 Hz, every measurement unit detects high dynamic processes in an impressive resolution of 0.36 mm. Thanks to the application of a special reference sensor, all fluctuations of the sound velocity will be compensated internally. That means, the data obtained from the measurement device are independent of all the sound velocity interfering parameters, e.g. temperature, air humidity, air pressure, etc. Nevertheless the last column of the data telegram contains the sound velocity in m/s.

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High Resolution Wave Measurement

### Specifications:

- Measurement range: 200 mm up to 1200 mm
- Superior resolution: up to 0.36 mm
- Measuring rate: 50 Hz
- Measuring frequency: 200 kHz
- Power supply: 230 V (110 V optional)

### Interfaces:

- RS232 with 115 kBaud
- BNC output 0-10 V
- TTL Trigger (opto-isolated)

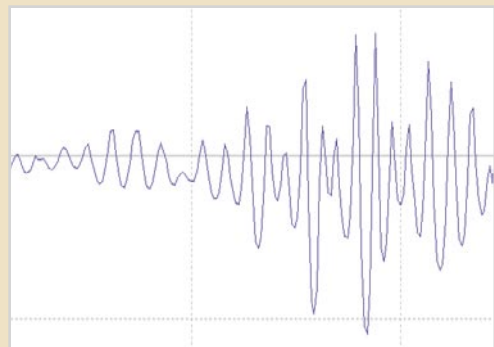
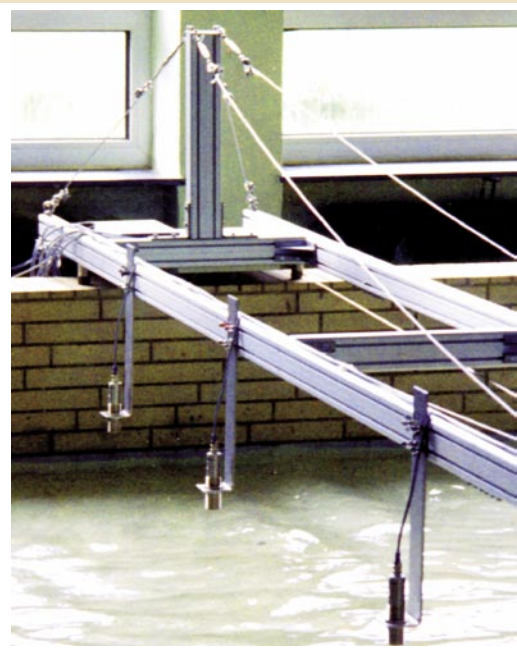
### Application:

Measurements in towing tanks, flood- and surface water models for:

- fast analysis of waves and wave fields
- fast recording of topographic contours in models

The basic **UltraLab<sup>®</sup> ULS HF5-A** consists of:

- 1 UltraLab<sup>®</sup> USS 13/HF sensor for one channel
- 1 Controller unit with four synchronised channels
- 1 Sensor REF-300 for precise sound velocity measurement
- 1 Sensor connection cables



Due to the synchronisation of the 4 channels, the sensors can be located very close to each other. The measuring of wave fields in high resolution concerning time and place are possible with the HF5-A.

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