UltraLab® ULS 80 D

Sensing of Water Level and Waves

The ULS 80D with 8 sensors at 8 independent channels

UltraLab® ULS 80D is designed for the measuring of water surfaces in Ship Model Basins, Flumes, Hydraulic Laboratories at Universities and Institutes and Simulation Facilities of Physical Models. It is an easy to handle ultrasonic measuring system, which measures water level and waves fast and precisely. Because of its outstanding accuracy, the small beam angle of <3° and its remote sensing technology almost all kinds of water dynamics (also steep waves) can be measured without interferences or influence to the target. Measurements close to or direct at objects/models are possible. The ULS is easy to handle and due to the wide range of application an universal tool for laboratories.

UltraLab® ULS 80D Specifications

- 8 independent channels
- Various sensors measuring from 30 mm up to 3.4 m
- Superior resolution up to 0,18 mm
- Repetition rate up to 75 Hz
- Low operation effort and no maintenance necessary
- Analogue 0-10 V and digital RS232 output

The ULS 80D system is equipped with eight fully assembled independent channels. BNC voltage output (0–10 V) and digital RS232 (optional) output makes an easy integration into every data acquisition system possible.

The UltraLab® ULS 80D is optimised to measure:

- Steep, small and fast waves
- Object contours (oil, ice, bodies, etc.)
- Wave fields around a ship model
- Wetted surfaces
- Flood wave propagation and Water levels

Applications:

- Optimisation of Ship Models
- Measurements in Flood- and Water Surface Models
- Optimisation of Hydraulic Constructions
- Determination of Wave Parameters
- Analysis of Wave Fields
- Measurement of Object Contours

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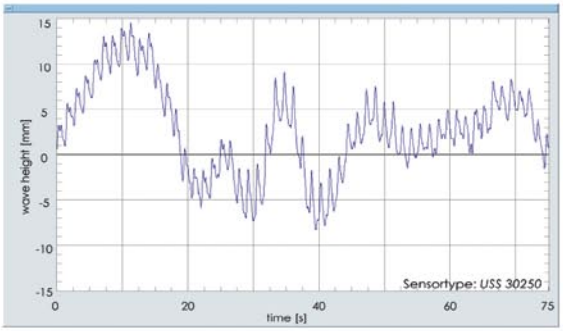
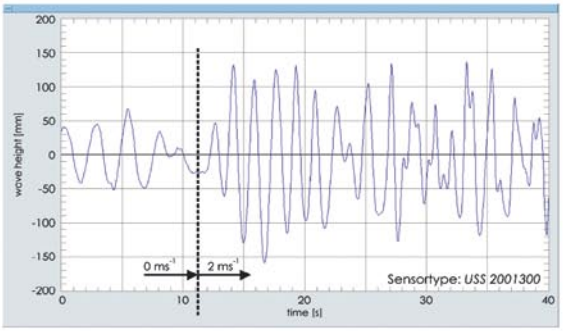
Available Sensors	USS 325	USS 635	USS 20130	USS 35340
Blind area:	30 mm	60 mm	200 mm	350 mm
Working range:	250 mm	350 mm	1300 mm	3400 mm
Frequency:	320 kHz	400 kHz	200 kHz	120 kHz
Techn. resolution:	0.18 mm	0.18 mm	0.18 mm	0.18 mm
Reproduceability:	±0.15%	±0.15%	±0.15%	±0.15%
Output update:	75 Hz	75 Hz	50 Hz	20 Hz
Analogue output:	0–10 V	0–10 V	0–10 V	0–10 V
Protection class:	IP 65	IP 65	IP 65	IP 65

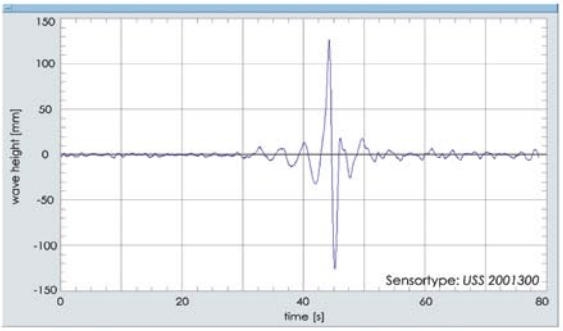
Digital output via RS 232



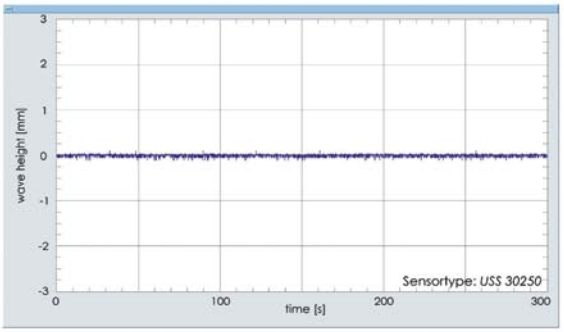
VWS Berlin Model Basin, Germany
Superposition of two different waves



Hamburg Ship Model Basin, Germany
Planar motion (v = 2 ms^{-1}) towards incoming wave



Potsdam Ship Model Basin, Germany
Local reading of a single wave packet



University of Applied Sciences Suderburg, Germany
High resolution measurement of water level

Key References:

AMC Australian Maritime College · Università degli Studi di Bari · Universität Bremen · CEHIPAR · HSVA · NTNU Norwegian University of Science and Technology · Lehrstuhl und Institut für Wasserbau und Wasserwirtschaft RWTH · SVA · TU Berlin · TU Delft · VTT · Marine Nationale

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