

## Universal sediment and suspended matter profiler

### Applications

- Monitoring the navigability of harbours and waterways
- Supporting intelligent dredging management by technically efficient measurement
- Silt and sediment characterization
- Analysis of fluid mud layers
- Monitoring in sedimentation basins
- Investigation of sediment transport

### Features

- Online analysis in place of costly sampling
- No estuary-dependend calibration needed
- Easy-to-use device
- Robust housing made of stainless steel
- High inherent weight – can even be used under extreme flow conditions



Figure 1: admodus® **USP pro**

### Description

The admodus® **USP pro** is an innovative „in situ“ measuring probe for online monitoring of the nautical bottom in harbours and waterways. The system provides a depth-dependent density profile quickly and reliably, as well as a variety of other indicators for characterising suspended matter and sediments.

The admodus® **USP pro** is linked via high-speed Ethernet to a PC which displays all measurement data clearly laid out and in real time, stores them, and exports them as a PDF report as required.

As the probe descends it continuously records its depth and inclination, as well as the density, frequency-dependent acoustic loss, speed of sound and temperature of the medium.

The measurement data ascertained can be stored together with the GPS data of an external receiver, so that the precise location of measuring points and a correlation with echo sounder bearings are both easily achieved.

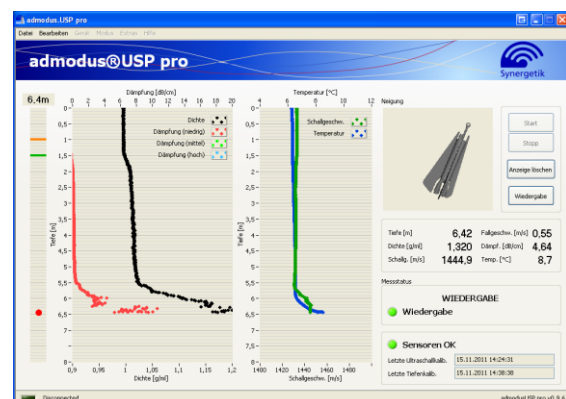


Figure 2: Application software

## Technical Data

### Mechanical

Probe housing material:	stainless steel (V4A "1.4571", seawater- and acid-proof)
Dimensions:	93 cm x 55 cm (paddles mounted), 93 cm x 18 cm (without paddles)
Weight:	approx. 36 kg
Cable length:	30 m (other lengths on request)
Absolute maximum depth:	40 m (greater depths on request)
Operating temperature range:	-20°C to +40°C
Storage temperature range:	-20°C to +55°C
Probe features:	paddles easily removable, no moving/external parts, all sensors integrated and protected against mechanical stress

### Electrical

Supply voltage range:	+15V <sub>DC</sub> to +28V <sub>DC</sub>
Power consumption:	6 W
Network interface:	LAN - 100Base-TX (Standard RJ45-Connector)

### Sensor technology

Analog-Digital-Converters:	Ultrasound: 12 Bit, 40 MHz Other sensors: 24 Bit, 4 kHz
Internal measurement rate:	4 kHz
External measurement rate:	50 Hz (others on request) down to 1 Hz
Density resolution:	0,001 g/cm <sup>3</sup>
Density accuracy:	± 0,005 g/cm <sup>3</sup> (homogenous medium)
Density range:	1 - 1,5 g/cm <sup>3</sup>
Vertical resolution:	< 1cm (vertical velocity < 0,5 m/s)
Pressure measurement range:	0 to 5 bar (others on request)
Pressure resolution:	0,001 bar
Pressure accuracy:	± 0,003 bar
Temperature resolution:	0,1°C
Temperature accuracy:	± 0,2°C

### Certifications

CE-marking:	<b>CE</b>
Electromagnetic compatibility:	EN 61000-6-2 (immunity for industrial environments) EN 61000-6-4 (emission standard for industrial environments)

### Application software

Hardware requirements:	Notebook with LAN – 10/100Base-TX
Operating system:	Windows XP / Vista / 7
Language:	English/German
Display:	Real-time
Save to disk interval:	adjustable from Real-time to 1 value per minute
Operation:	manual mode and "hands-free" automatic mode
Custom modifications:	possible on request

## Revision history

Version	Changes	Date
Rev. A	<ul style="list-style-type: none"><li>• Creation of datasheet</li></ul>	August 2011
Rev. B	<ul style="list-style-type: none"><li>• Product photo</li><li>• Technical data</li></ul>	November 2011
Rev. C	<ul style="list-style-type: none"><li>• New text</li></ul>	April 2012
Rev. D	<ul style="list-style-type: none"><li>• Address</li><li>• Technical data</li></ul>	July 2016
Rev. E	<ul style="list-style-type: none"><li>• Technical data</li></ul>	January 2023

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