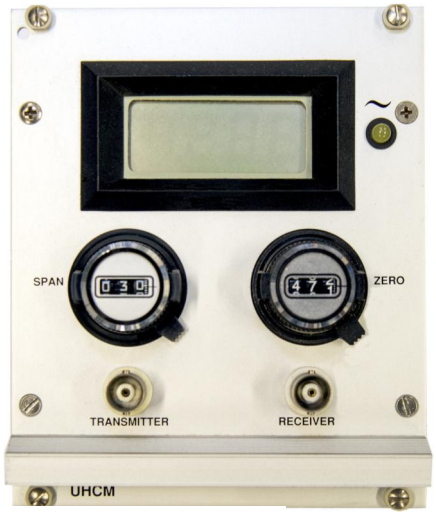
Instrument

Ultrasonic High Concentration Meter

The measuring principle of the UHCM is based upon attenuation of ultrasonic energy passing through a suspension of sediment particles. Its measuring range depends, to some extent, upon the kind of the particles. The UHCM is intended for high concentrations of particle suspensions of clay, silt, sand, mud, sludge and similar. The analogue output signal is proportional to sediment concentration.

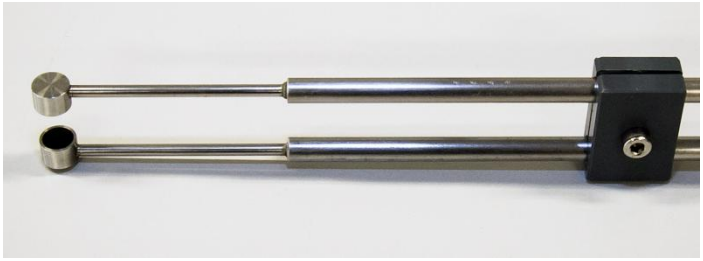
The UHCM-system comprises:
- an acoustic probe with opposing transmitter and receiver elements
- a UCC instrument housing and acting as system power supply
- a UHCM control-unit with:
  - controls
  - logarithmic amplifier
  - LCD-display unit
  - analogue output



UHCM cassette front

Applications
- laboratory research
- bed sediment of rivers and harbours
- slurries (cement, clay, etc.)
- environmental investigations and studies
- concentrated suspensions in the food-industry
- sludge (water treatment, sewage, etc.)

Features
- output is linearly proportional to the concentration
- output available on LCD displays as well as analogue signal at output connector
- sensors can be optimised for specific applications
- the control unit fits in the standard Deltares UCC universal carrying case


Probe detail (measuring volume)

Technical specifications

Probe (standard)

Range	China clay ~1200 g/L sand d_{50} = 200 µm ~ 400 g/L
Transducer(s)	diameter 9 x 6 mm both
Acoustical path length	11 mm
Materials	stainless steel 316, epoxy
Connection cables (2)	2.5m (standard supplied)

Transmitter

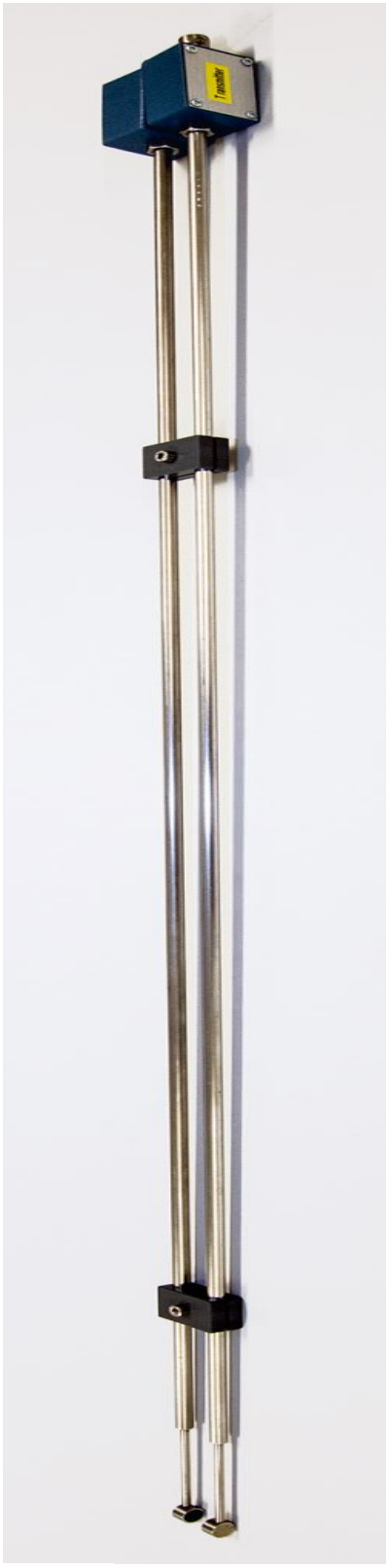
Burst frequency	5 MHz (other frequency optional)
Burst width	about 7µs
Burst interval	800 µs
Synchronisation	master – slave configuration when multiple instruments

Receiver

Dynamic range	50 dB
Response	10 Hz (display 1 Hz)
Accuracy	0.5 dB
Controls	zero-adjustment: 0 – 6 dB span-adjustment: 0 - 50 dB
Display	LCD display (3.5 digits)
Outputs	analogue voltage: 0 - 10 VDC
Output connector	BNC

Control Unit

UHCM control unit in Universal Carrying Case (UCC)	
Power	supplied by UCC-cabinet total consumption: 3.6 VA max.
Dimensions	106 x 129 x 187 mm (w x h x d)
Weight	0.9 kg



Probe