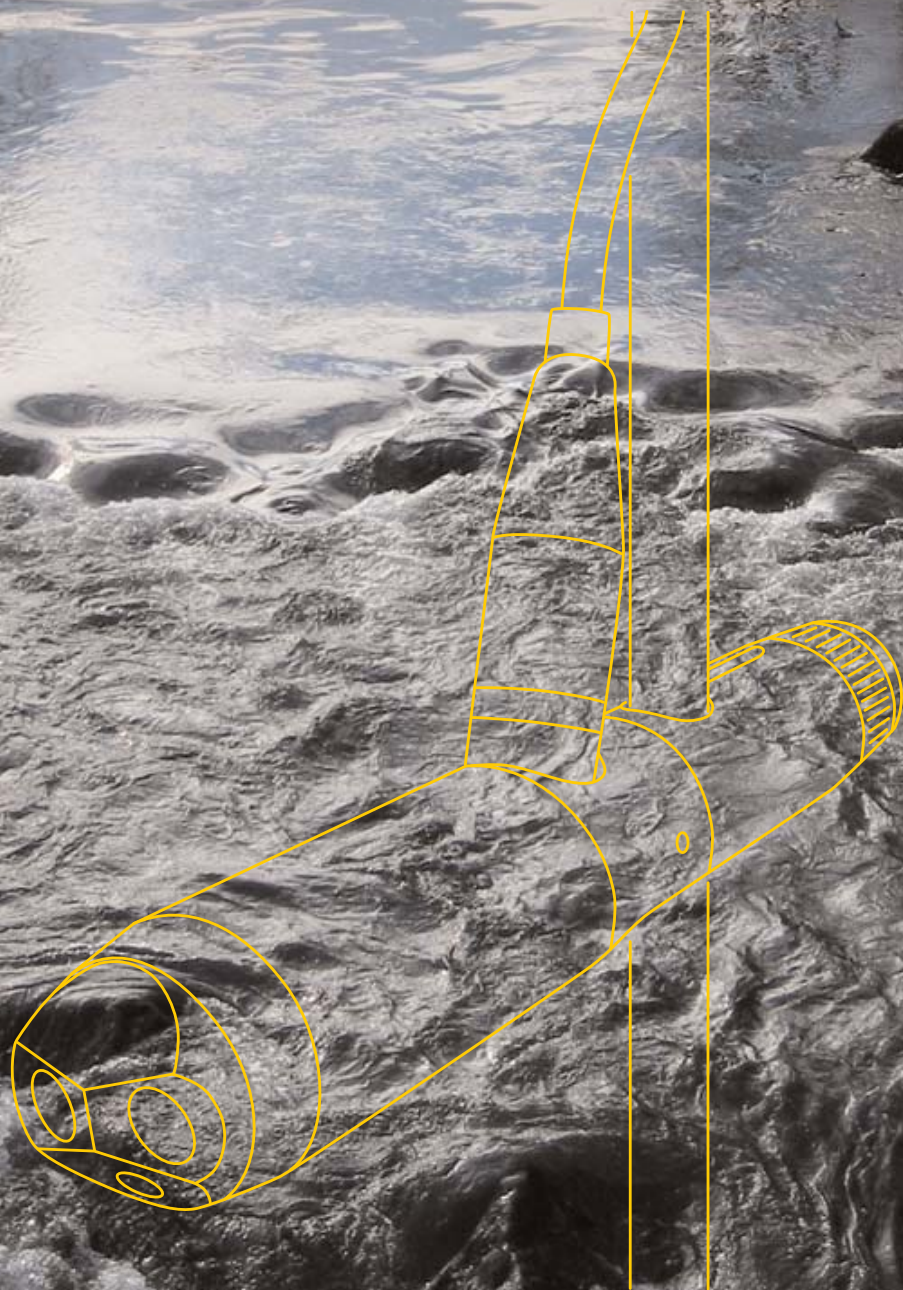




OTT ADC

The new Acoustic Digital Current Meter from OTT

DSP technology for precise rod-mounted measurements



Portable Acoustic Digital Current Meter

The OTT ADC (Acoustic Digital Current Meter) is designed for point velocity measurements in natural streams, rivers, creeks and open channels. Using the latest acoustic measuring principles and combined with a high end signal processor the instrument provides accurate and reliable data.

The instrument is equipped with a built-in pressure sensor that provides automatic depth readings for the determination of both individual vertical depths and prompting the user to set the correct sensor position.

The sensor interfaces to an ergonomically designed display unit that presents readings of all the essential measured parameters in an easy to interpret data format.

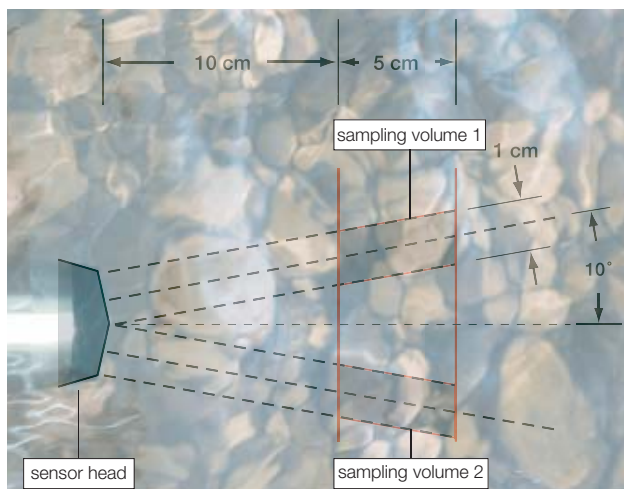
The instrument easily attaches to different types of wading rods and features an automatic discharge computation based on the internationally recognized ISO and USGS standards.

Measuring principle

The OTT ADC emits an ultrasonic burst consisting of 30 single pings that will be reflected by suspended particles in the water body (e.g. suspended material, plankton, air bubbles). Depending on particle size and shape an echo image returns and is processed in the systems DSP (Digital Signal Processor). After a short interval the instrument emits a second burst and a second echo image will be digitised.

Following the measurement phase the DSP checks both received reflection images for similarities using a cross correlation method. Rejecting all signal differences this method retains two similar images with a time shift which is then used to calculate the water velocity.

The velocity will be measured in front of the probe at a distance of about 10 cm. The following illustration shows the sampling volume for each beam – i.e the area out of which echo images will be processed.



Applications

The OTT ADC can be used in a wide range of measuring sites:

- In natural streams, creeks, rivers and open channels
- In irrigation channels and canals
- At weirs and flumes

Velocity methods

The following internationally recognised measurement methods are used in the OTT ADC:

- ISO, USGS
- 2 points KREPS
- Ice, single and two points
- Multi points

Discharge calculation methods EN ISO 748

- Mid Section Method
- Mean Section Method

Innovative, portable and easy to use

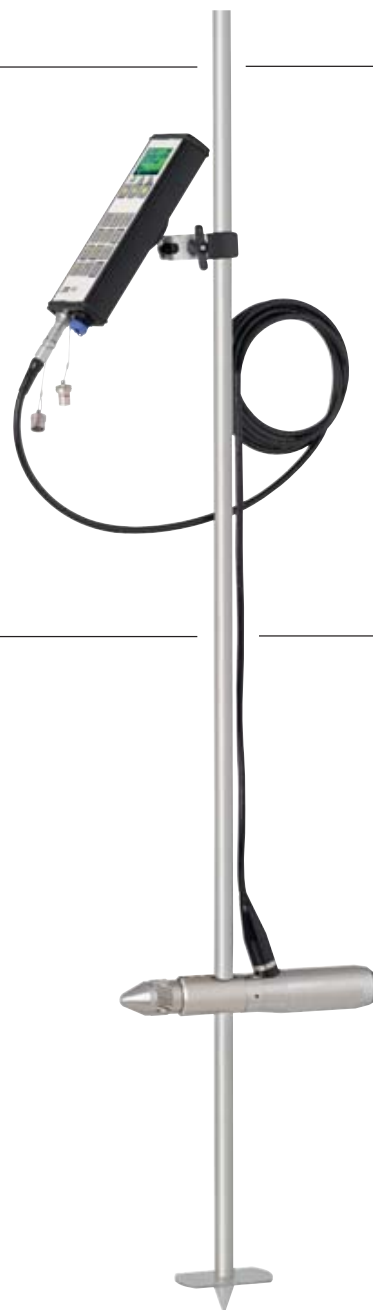
OTT ADC – advantages at a glance

- Automatic discharge calculation based on international standards (EN ISO 748, USGS standards)
- Data review software OTT QReview with open data export interface via ASCII and XML (e.g. to BIBER and SoftwareQ)
- Built in pressure sensor for automatic measurement of sensor immersion and vertical depth
- Variable cable lengths (2,5 m, 6 m or 10 m) for measurement with wading rods and/or relocation devices
- Power supplied from a rechargeable battery pack providing more than 20 hours user operation

Handheld with intelligent user guidance

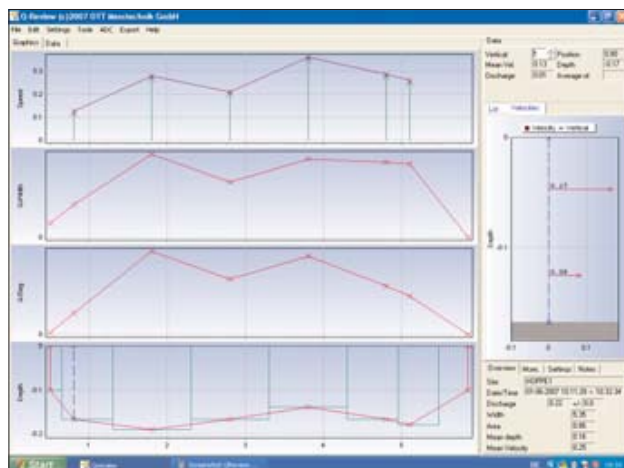
Designed for field conditions the handheld provides all features to run your measurement:

- Graphical display with large easy-to-read numbers of all important measured parameters
- One hand operation made possible by using flexible adapter mount for the display on rods of various diameter
- Built-in step by step user guidance for easy and safe deployment in the field



Software OTT QReview

- Data transmission directly from the handheld to the PC
- Data review
- Post processing (e.g. change of discharge calculation method)
- Data export via XML- and ASCII-files (e.g. to BIBER and SoftwareQ)



Technical Data

Water velocity measurement

Range	-0.2 m/s to +2.4 m/s
Accuracy	±1 % of measured value ±0.25 cm/s
Sampling volume	
Distance from sensor	10 cm
Diameter	1 cm per beam
Length	5 cm
Acoustic frequency ultrasonic transducer	6 MHz

Depth measurement

Piezoresistive pressure cell (absolute)

Range	0 to 5 m
Resolution	0.01 % FS
Accuracy	0.1 % FS
Max. overload	1.5 of full range

Temperature measurement

Range	-5 °C to 35 °C
Accuracy	±0.5 °C
Resolution	0.1 °C

Power supply

Type	rechargeable batteries, firmly integrated
Nominal Voltage	9.6 VDC
Operating time	typ. more than 20 hours

Environmental

Operating temperature range	-20 °C to +60 °C
Shock and vibration	compliant with EN 60068-2-32

Dimension and weight

Cylinder	Ø 40 mm
Length	14.5 cm
Weight in air	800 g
Weight in water	620 g

Materials

Probe	Delrin®housing stainless steel
Screws	stainless steel

Data Recording

Capacity	4 MB
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OTT QReview Software

Operating system	Windows®2000, Windows®XP, Windows® Vista
Functions	Download data Data playback and post processing Data export interface (XML, ASCII)



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