Mobile Discharge Measurement
OTT ADC
Acoustic Digital Current Meter
for streams, rivers and open channels

OTT ADC

Ultrasound technology for precise rod-mounted measurements

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.

In the course of a measurement, the OTT ADC measures the vertical velocity distribution at each vertical of a cross-section. The instrument is also 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 handheld 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.

Quantitative
Hydrology

OTT ADC – Innovative, portable and easy to use

Handheld unit with intelligent user guidance

— Large keys for easy operation, basic settings are entered fast
— One hand operation made possible by using flexible adapter mount for the handheld on rods of various diameter
— Graphical easy-to-read display with information about all important parameters and measured values, including status information to review measurement quality
— 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
— Clear and comprehensive display of measurement results
— Post processing (e.g. change of discharge calculation method)
— Open data export interface via ASCII and XML (e.g. to SoftwareQ and BIBER)

Performance Features & Benefits

— Discharge measuring with the classical verticals process using conventional rods
— Automatic discharge calculation based on international standards
— 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

Applications

— Natural streams, creeks, rivers and open channels
— Irrigation channels and canals
— Weirs and flumes
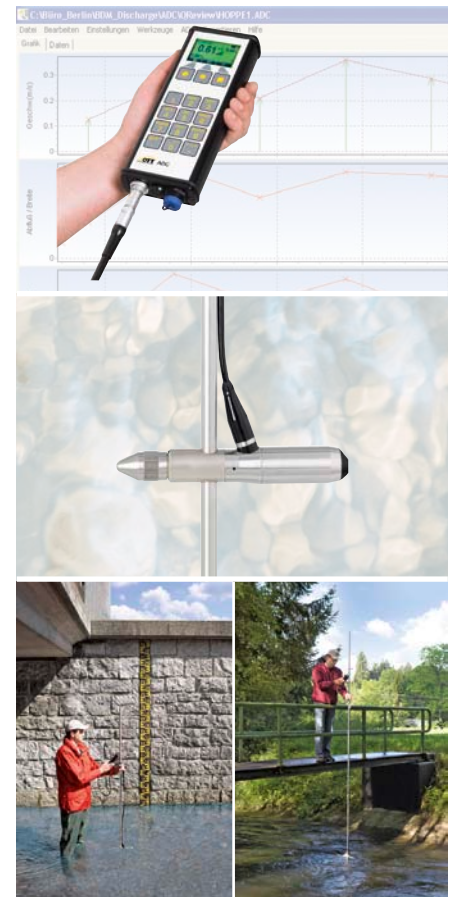
Technical Data

Water velocity measurement
- Range: –0.2 m/s … 2.4 m/s
- Accuracy: ±1% of measured value ± 0.25 cm/s
- Resolution: 0.001 m/s
- Acoustic frequency ultrasonic transducer: 6 MHz

Sampling volume
- Distance from sensor: 10 cm
- Diameter: 1 cm per beam
- Length: 5 cm

Depth measurement
- Piezoresistive pressure cell (absolute)
- Range: 0 … 5 m
- Resolution: 0.01% FS
- Accuracy: 0.1% FS
- Max. overload: 1.5 of full range

Temperature measurement
- Range: – 5 °C … 35 °C
- Accuracy: ± 0.5 °C
- Resolution: 0.1 °C

Velocity measurement methods
- ISO, USGS standard
- 2-point KREPS
- ice, 1-point and 2-point
- multi point

Discharge calculation methods
EN ISO 748
- Mid Section Method
- Mean Section Method

Power supply
- Rechargeable batteries, firmly integrated
- Nominal Voltage: 9.6 VDC
- Operating time: typ. 14 hours
  Battery life which can be actually achieved depends on environmental conditions and the number of charging cycles completed.

Data Recording
Capacity: 4 MB

Environmental
- Operating temperature range: – 20 °C … + 60 °C
- Shock and vibration: compliant with EN 60068-2-32

Materials
- Sensor: Delrin® housing stainless steel
- Screws: stainless steel
- Handheld unit: aluminium, powder coated

Dimension and weight
Cylindrical sensor body:
- Ø 40 mm
- Length: 14.5 cm
- Weight in air: 800 g
- Weight in water: 620 g
Handheld unit:
- L x W x H: 23.3 cm x 8.3 cm x 3.2 cm
- Weight: 700 g

OTT Qreview Software
- Operating system: Windows® 2000, Windows®XP, Windows® Vista, Windows® 7
- Functions: download data, data playback and post processing, data export interface (XML, ASCII)