



Mobile Discharge Measurement
OTT MF pro
Magnetic-inductive measuring method for
current measurements in open channels

OTT MF pro

Modern technology for rough environments

The OTT MF pro unit is a magnetic-inductive current meter designed to measure point velocities in streams, smaller rivers, canals, or measurement flumes. The low-maintenance system consists of a compact and light-weight sensor and a robust handheld unit that reliably operates even under rough environments. Both system components are designed to be attached to conventional wading rods.

As with conventional current meters, the sensor is guided through the measurement cross-section using the rod. The step-by-step menu of the handheld unit directs the user through these operations from the first to the last vertical. The measured point velocities are immediately shown on the display of the handheld unit and automatically stored. At the end of the measurement, the software uses the data recorded to calculate the total discharge according to recognized international standards.

Because of the principle of measurement used and the compact design, the unit measures even the lowest velocities (from 0 m/s on) in shallow waters and may be used for measuring in both weed-infested and dirty waters.

Quantitative
Hydrology

OTT MF pro – Less expenditure for precise data

Features and Benefits

- Compact and light-weight sensor without moving mechanical parts – requires almost no maintenance
- Automatic measurement of vertical depth and sensor immersion (optional)
- Automatic storage of all data recorded – one person is sufficient to perform the measurement within the shortest possible time
- Point velocity immediately shown on the display – allows trends to be visualized quickly
- Discharge calculation according to international standards – less time required for desk work, no calculations necessary after measurement
- Easy data export from handheld unit to PC through USB interface – no error-prone copying of log data

Handheld unit for uncompromised use in the field

- Large graphic colour display – easy to read, even in direct sunlight
- Menu-driven step-by-step user guidance – setup, performing the measurements and handling the data is easily learned, even for inexperienced persons
- Robust, dust, and water protected enclosure (IP67) – unit remains operational even after momentary immersion
- Rechargeable lithium-ion battery – lasts 18 hours when the unit is intensively used
- Flexibility – one handheld unit may be used for several MF pro sensors

Applications

- Open channels (streams, small rivers, canals, measurement flumes)
- Sewers as well as polluted or dirty waters
- Weed-infested waters; turbulent flow conditions
- For calibration or control measurements (on continuously measuring current meters, gauging weirs, or measuring channels).

Technical Data

Velocity measurement

- Measurement method: Magnetic-inductive
- Measuring range: 0 m/s ... 6 m/s
- Accuracy at 0 ... 3 m/s: ±2% of meas. value ±0.015 m/s
- Accuracy at 0 ... 5 m/s: ±4% of meas. value ±0.015 m/s
- Zero stability: ±0.015 m/s
- Resolution: 0.001 at measured value <10
0.01 at measured value <100
0.1 at measured value >100

Depth measurement (option)

- Absolute pressure sensor with single point calibration
- Measuring range: 0 ... 3.05 m
- Accuracy*: The larger of ±2% of measured value or ±0.015 m

*Steady state temperature and static non-flowing water

Methods for velocity measurement

- Streams: 1, 2, 3, 5, and 6 point measurement (ISO and USGS standards)
- Conduits (canalization): 0.9 x Vmax; 0.2/0.4/0.8; 2D; velocity integrating method

Conduit profiles

Circular, rectangular, trapezoidal, 2/3 egg, inverted 2/3 egg

Methods for discharge calculation

- EN ISO 748
- Mid section method
- Mean section method

Power supply

- Lithium-ion battery
- Life: 18 hours typ. (20°C)

Data memory capacity

Up to 10 measuring locations (of 32 vertical profiles each)

Temperature (operation/storage)

-20°C ... +60°C

Handheld unit display

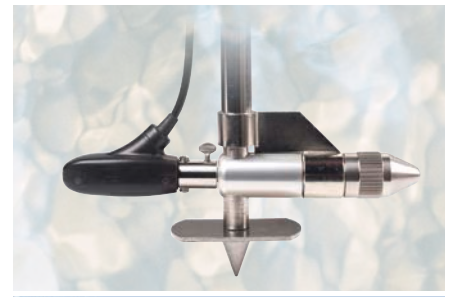
- Graphic colour display, transfective
- LCD, 3.5", QVGA

Handheld unit interface:

- USB, Mini B type, 5-pin

Export format

TSV (Tab Separated Value) file format



Operating modes

- Real-time velocity measurement
- Discharge profile (stream/conduit)

Noise suppression

50 Hz, 60 Hz (adjustable)

Cable lengths

2 m, 6 m, 12 m, and 30 m

Material

- Sensor housing: ABS, glass-fiber reinforced
- Handheld unit: Polycarbonate, moulded by shock-absorbing elastomer (TPE)

Dimensions and weight

Sensor body:

- L x W x H: 11.9 cm x 4.3 cm x 6.3 cm
- Weight: 0.5 kg (with 20 m cable)

Handheld unit:

- L x W x H: 21.8 cm x 9.3 cm x 5.3 cm
- Weight: 0.68 kg

IP class of protection

- Sensor: IP68
- Handheld unit: IP67 (USB cap attached)