

Instrument

Amphibious profile indicator PV11X

The profile indicator instrument has been developed for measuring the bed level of a model setup. The wheel probe fitted to the lower side of the drive shaft measures the bed elevation by sensing the bed. The wheel will follow the elevation of the bed. As the control system will keep the wheel in a (almost) constant position of with respect to the drive shaft, the drive shaft will follow the elevation of the bed. The position of the drive shaft is the measure of the bed elevation, which is available as analogue and optionally as a digital signal. The wheel position with respect to the drive shaft is measured with a magnetic sensor so it functions as well as submerged into the water as well dry in the air. The wheel can follow the variations of the bed gradually as long as the radius of the wheel is in a right proportion to the bed variations.

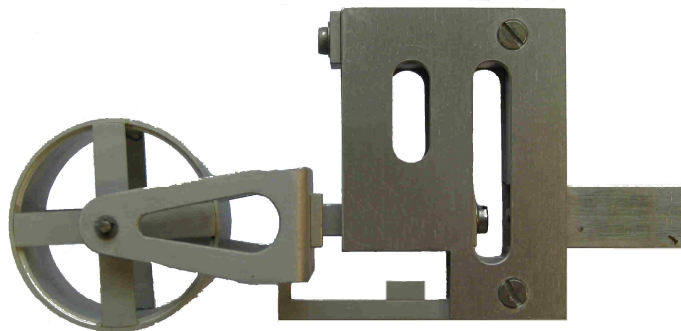
Applications

Common applications for the profile indicator are:

- bed level contour mapping
- measurement of local scour and erosion in hydraulic models
- studies in bed load transport
- continuous measurement of bed levels

Features

- high resolution sensor
- wide range of bed material properties acceptable
- high dynamic characteristics, safety switch, to retract the drive shaft.
- applicable in all kinds of water, even high turbid water.
- different wheel sizes available as an option.
- Remote control as an option, mechanical switches or RS232



Detail of the wheel sensor.

Technical specifications

Maximum depth to be measured (other depths optional)	1350 + 250 mm
Minimum water depth	150 mm
Stroke	1350 mm
Maximum vertical gauge speed	200 mm/s
Force off the wheel on the bed (adjustable)	30 gram
Minimum detectable bed level variation	0.2 mm
Power supply	36 VDC / 4 A
Weight	8.3 kg (excl. power adapter)
Size	285 x 180 x 160 mm (length x width x height)
Output range	-10 – +3 V
Calibration	0.1 V/cm
Resolution	0.01% of full scale
Linearity	0.1% of full scale



Rear view: control panel



Wheel sensor setup



More information:
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