measure analyse optimise

NivuFlow Mobile

NivuFlow Mobile 750

NivuFlow Mobile 600

NivuFlow Mobile 550

robust. self-sufficient. online. Mobile Flow Metering

NivuFlow Mobile

The NivuFlow Mobile device series offers you portable, high-precision flow measurements in part filled and full channels, ducts and pipes of various geometries.
A system consists of a transmitter and the appropriate sensors.
Thanks to sophisticated power management and a continuous communication concept, it is ideal for long-term measurements with automatic data transmission.

Highest measuring accuracy in any environment

For the toughest environmental conditions

Operation using smartphone, tablet, notebook

Excellent power management

Robust and reliable for the toughest conditions

Featuring a protection rating of IP68, our sensors and transmitters can withstand extreme environments. The sensors can be used permanently under water. Immersion is no problem for the transmitter. Even when the cover is open, the transmitter is protected according to IP67. The batteries can be easily replaced even in damp environments, such as in the rain.

Excellent power management

The transmitter can be operated with up to two rechargeable battery blocks, which guarantees a long service life and power supply for the sensors. The battery can be replaced on site without interruption - without any additional equipment or enclosures.

Intelligent data transmission

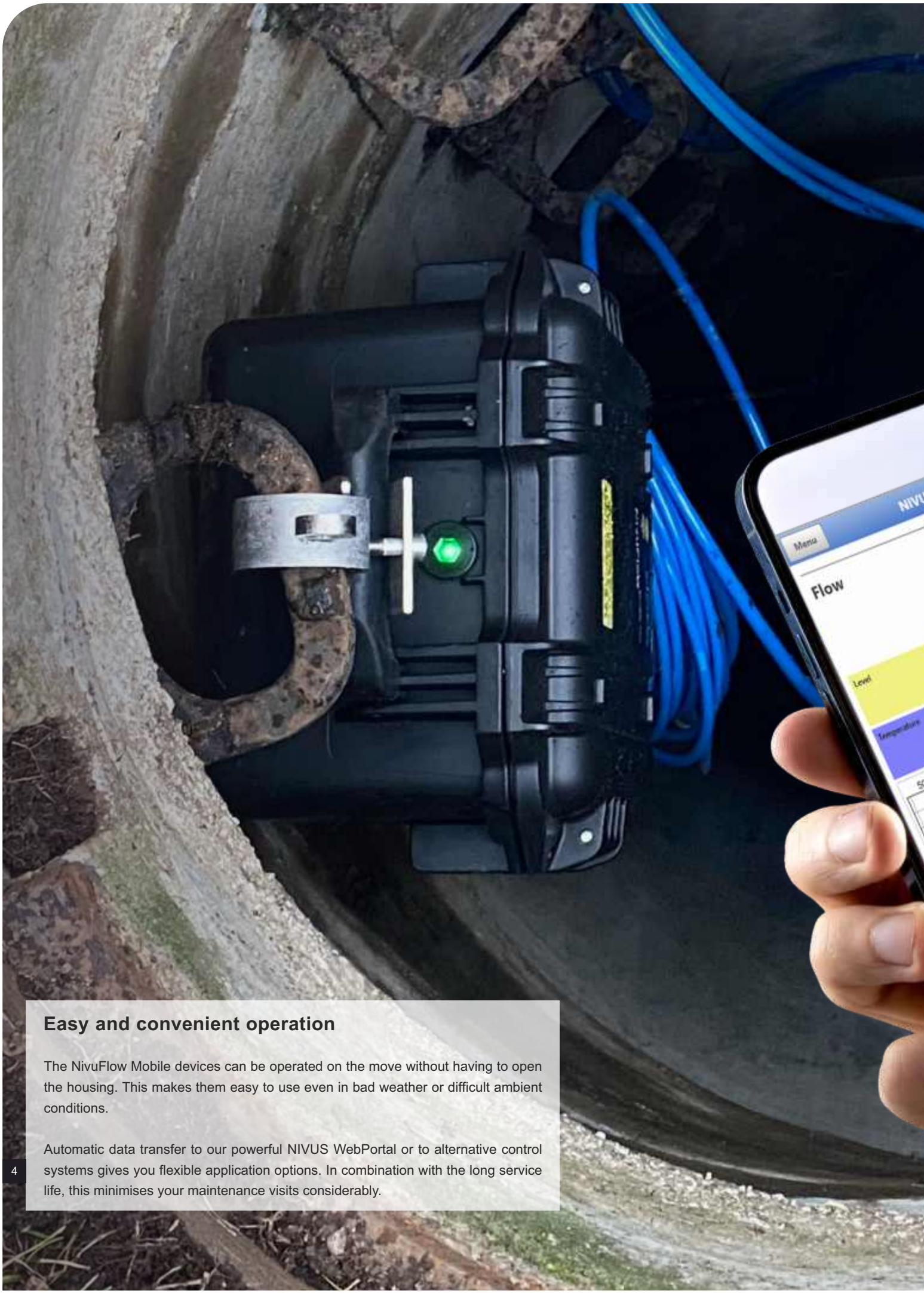
Measurement data is transmitted via the mobile phone network either to the NIVUS WebPortal or to customer systems and can be accessed worldwide.

Easy and convenient operation

The state-of-the-art operation is intuitive via a password-protected web browser - ideal for tablets or smartphones. The quick start wizard makes it easy to set up.

Intelligent data transmission

Test our Battery Life Calculator



Easy and convenient operation

The NivuFlow Mobile devices can be operated on the move without having to open the housing. This makes them easy to use even in bad weather or difficult ambient conditions.

Automatic data transfer to our powerful NIVUS WebPortal or to alternative control systems gives you flexible application options. In combination with the long service life, this minimises your maintenance visits considerably.

Main menu

Configuration of the measuring point

Setting up level sensors

Intuitive operation - test it yourself

Mobile

NivuFlow

No matter whether clean or dirty water - our NivuFlow Mobile systems can handle any measuring task. Various technologies such as ultrasonic cross correlation, transit time difference method or radar surface velocity measurement guarantee reliable results for your application.
Our selection of sensors offers you the option of both wetted and contactless measurements.

Suitable for every medium

NivuFlow Mobile 750

Flow metering in part filled and full canals

- Wastewater applications
- Calibration of hydraulic calculation models
- Determination of the scope of sewer renovation
- Localisation of extraneous water volumes
- Throttle discharge verification

NivuFlow Mobile 600

Contactless flow metering in full pipes

- Measurement of the throttle discharge flow rate in culverted full pipes
- Verification of dirty water pumps
- WWTP drains and return sludge lines
- Verification or calibration of existing flow measurement equipment
- Intakes and outlets or circulation systems
- Test measurement for suitability tests for stationary equipment
- Monitoring of process and service water

NivuFlow Mobile 550

Contactles flow metering in part filled pipes and canals

- Industrial wastewater discharges
- Measurement of extraneous water
- Measurement places with high dirt load and sedimentation
- Measuring points with shooting discharge at low flow levels
- In aggressive/abrasive media

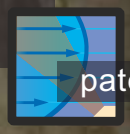
Mobile 750

NivuFlow

v-Cross Correlation Method

Flow metering with ultrasonic cross correlation

Our NivuFlow Mobile 750 series with cross correlation technology provides maximum precision through flow profile detection. Our accessories such as the calibrated pipe measuring sections or our selection of mounting material for sensors ensure optimum results under all measurement conditions.

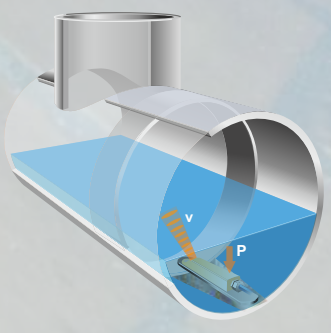


patented

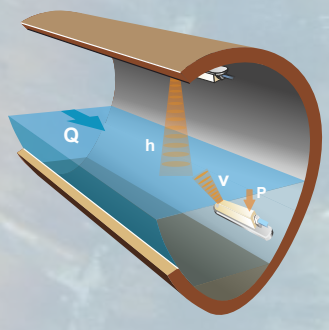
h

v

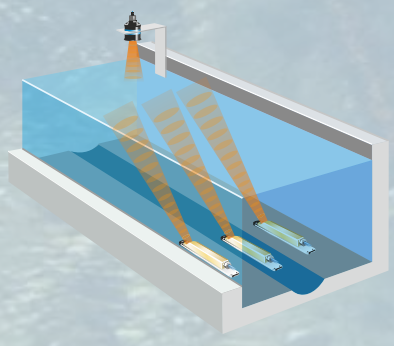
high accurate metering with
up to zu 32 measuring windows



Installation in circular profile with pipe mounting system



Additional level sensor from top for detection of very small volumes



Multi-path measurement in larger canals

Level measurement (h)

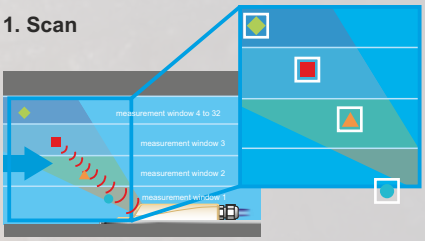
To make sure that the flow rate in partial filling can be measured accurately, we first ensure that the fill level is recorded precisely. The combination of hydrostatic measurement, water-ultrasound or air-ultrasound offers suitable solutions for every measurement task.

Flow velocity measurement (v)

Our NIVUS cross correlation method - based on ultrasonic reflection - is the most modern and efficient method for recording the exact flow velocity. It is ideal for media with particles or gas bubbles.

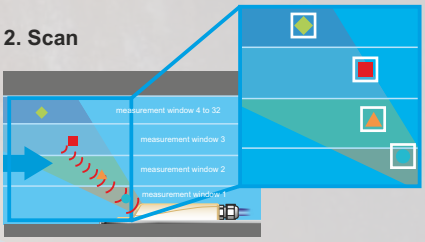
The existing scatterers are scanned with an ultrasonic impulse and their echo is stored as an image or echo pattern..

1. Scan



A second scan follows a few milliseconds later, the echo pattern of which is also saved.

2. Scan



The positions of clearly identifiable scatterers are recognised by comparing the two signals.

1. Scan + 2. Scan

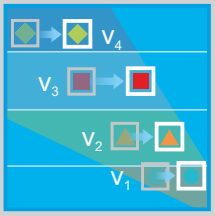
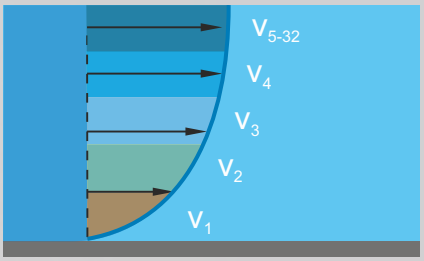


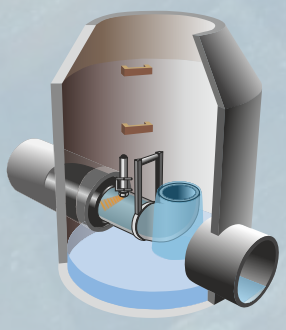
Image pattern overlay

The displacement of the scatterers over time can be converted into their velocity and thus into the flow velocity of the medium.



Determined flow profile

- High measuring accuracy with detection of the real flow velocity profile
- Flexible use in part filled and full pipes and canals
- High measuring dynamics from minimum to maximum flow rates



Calibrated pipe measurement section for measuring under difficult conditions

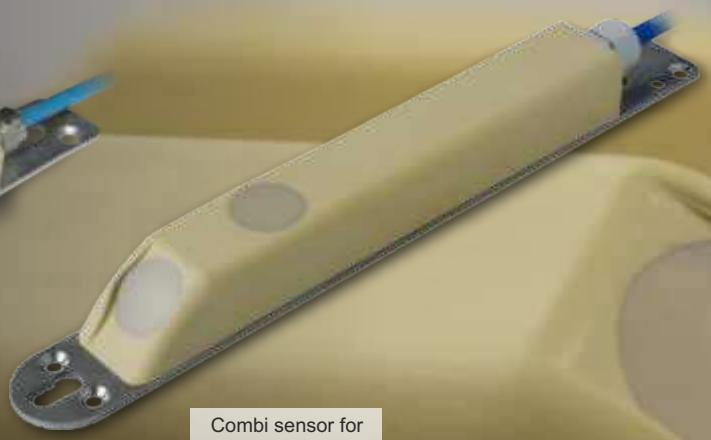
The right sensor for every application

For the NivuFlow Mobile 750, we offer a selection of flow velocity sensors both with and without integrated level measurement as well as separate level sensors with different measurement technologies..
This flexibility provides an optimal measuring system for a wide range of requirements such as external water measurements, indirect discharger measurements or billing measuring points.

Flow velocity sensors for all measuring points
Optimum selection for recording a wide variety of discharges.

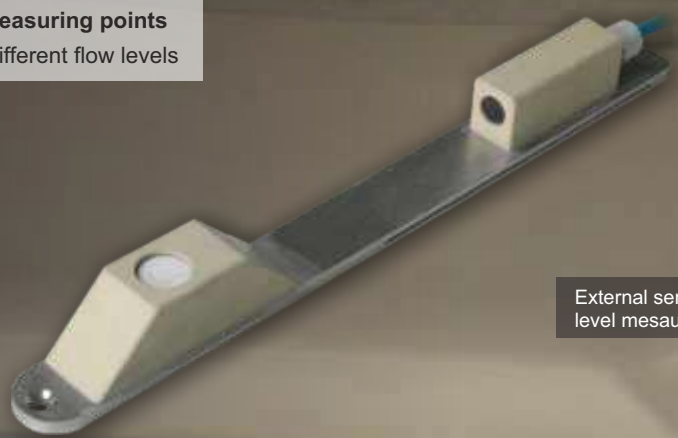
v-Sensor for low flow levels

v-Sensor with pressure cell



Combi sensor for larger flumes

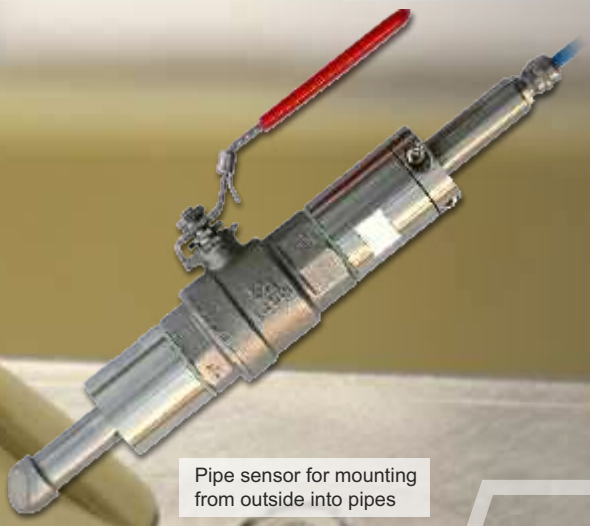
Level sensors for all measuring points
Selection for recording different flow levels



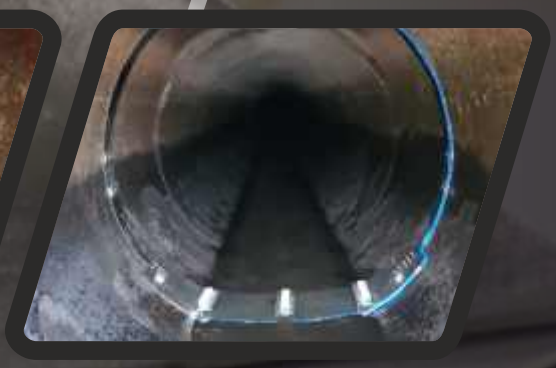
Level sensor with lowest dead zone

External sensors for level mesaurement

Measuring with NivuFlow Mobile 750



Pipe sensor for mounting from outside into pipes



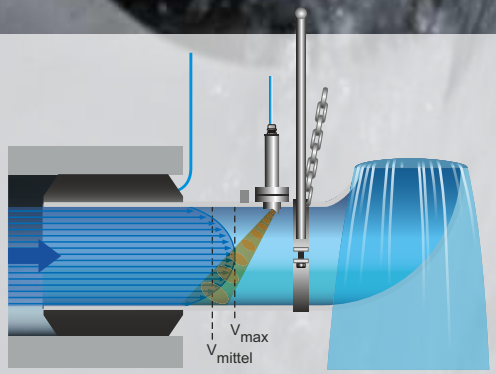
Your Benefits

- Ultrasonic sensors are absolutely zero-point stable and drift-free
- Low installation efforts thanks to optimised mounting accessories
- Installation under process conditions possible
- The harmonised selection of sensor designs ensures the best solution for every application

Mobile 750

NivuFlow

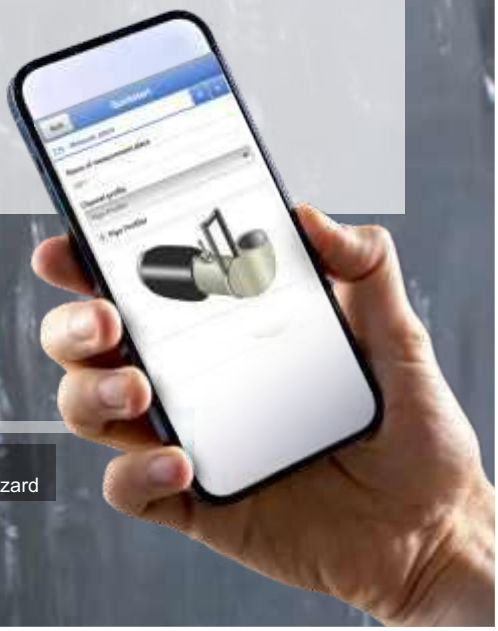
Extensions and accessories for the NivuFlow Mobile 750



NPP NIVUS Pipe Profiler – Precision under challenging conditions

The portable pipe measuring section as an extension to the **NivuFlow Mobile 750** provides you with highly accurate flow measurements at challenging measuring points, for example with low flow rates or unfavourable hydraulic flow conditions.
We offer different versions for pipes with internal diameters from 150 to 600 mm.

- Calibrated complete system with precisely defined pipe cross-sectional area
- Measurement at full filling with ideal flow profile
- Low weight enables easy installation in the shaft by one person
- Automatic sensor and type recognition



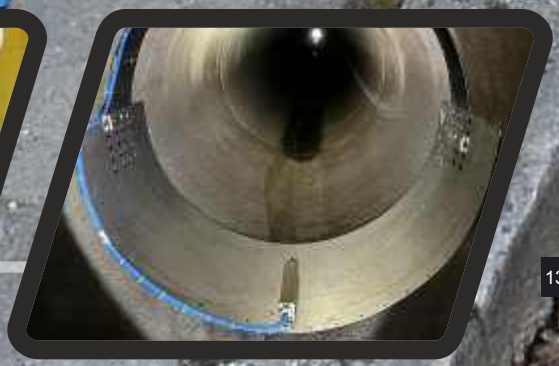
Easy commissioning thanks to quick start wizard

up to DN 2000

Pipe Mounting System – easy installation without drilling

The flexible mounting system makes installation particularly easy. Several NivuFlow Mobile 750 flow velocity sensors can be installed in no time at all.

- Corrosion-proof stainless steel
- Assembly without tools
- Adaptable for diameters from DN 150 to DN 2000



Easy and flexible installation of the sensors possible in just a few minutes

Mobile 600

NivuFlow

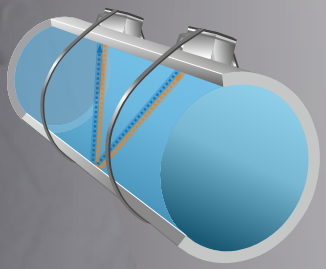
Clamp-On
Transit Time Difference Method

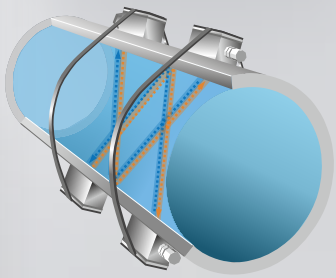
Flow meter for monitoring full pipes

Our **NivuFlow Mobile 600** based on the transit time difference method offers you reliable and accurate measurement in full pipes for both clean and dirty media.

Our clamp-on sensors measure without contact and are characterised by the shortest installation times, as they are clamped onto the pipe from the outside.

The water temperature is also output along with the flow rate. Additional sensors allow the line pressure to be recorded in parallel.

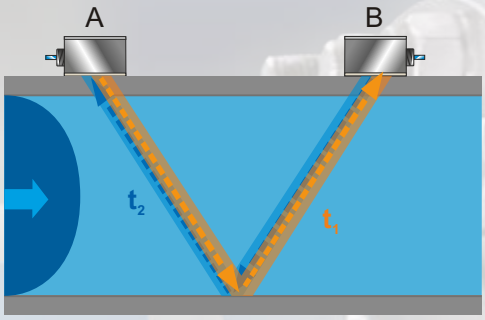




Clamp-On 1-path measurement, 2-path measurement for increased accuracy

Precision through transit time difference

The measuring principle of our NivuFlow Mobile 600 is based on recording the ultrasonic signal transit time between two sensors (A and B).



The signal transit time in the flow direction t_1 is shorter than the signal transit time against the flow direction t_2. The difference between these two transit times is proportional to the average flow velocity along the measurement path v_m. Our NivuFlow Mobile 600 calculates the average cross-sectional velocity v_A from the measured path velocities v_m.

$$Q = A \cdot v_A$$

A= Cross-sectional area
v_A= Average flow velocity in the cross-section

v

Your Benefits

- Non-intrusive installation without interrupting the process
- Can be applied with different dimensions and materials
- High measuring accuracy with varying flow conditions

Easy installation thanks to mounting systems for clamp-on sensors

Clamp-On Sensor

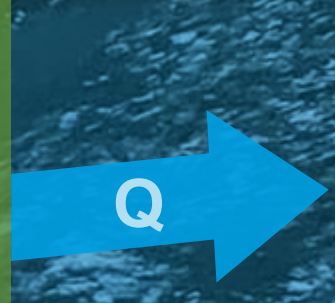
Mobile 550

NivuFlow

v-Radar measurement method

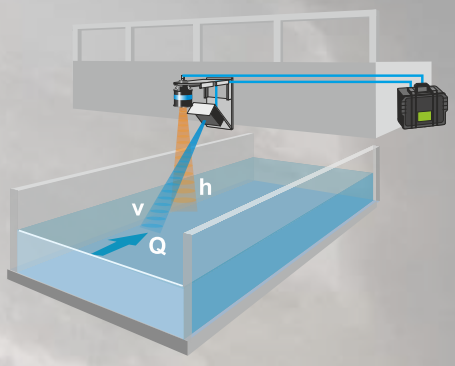
Contactless radar flow measurement in part-filled canals and pipes

Our **NivuFlow Mobile 550** utilises contactless and maintenance-free sensors for flow measurement. It is therefore also suitable for abrasive or aggressive media.
Hydraulic models precisely determine the flow profiles in the most common geometries.
Typical applications are measurements in the sewer network under difficult conditions, e.g. with shooting discharge, high dirt loads or channels at risk of sedimentation.

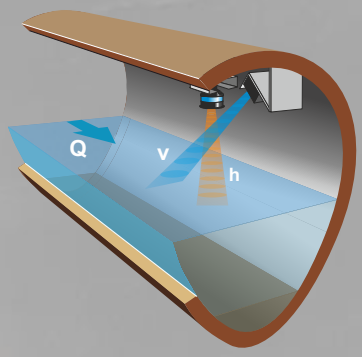


Your Benefits

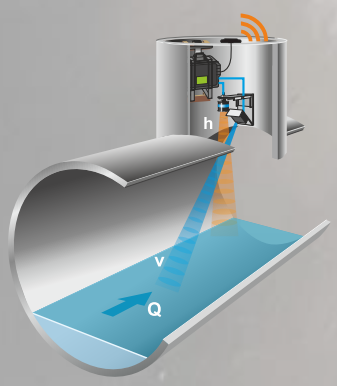
- Contactless measurement of surface velocity
- Easy installation without structural measures in the water
- Use under difficult conditions



Control measurement for open channels



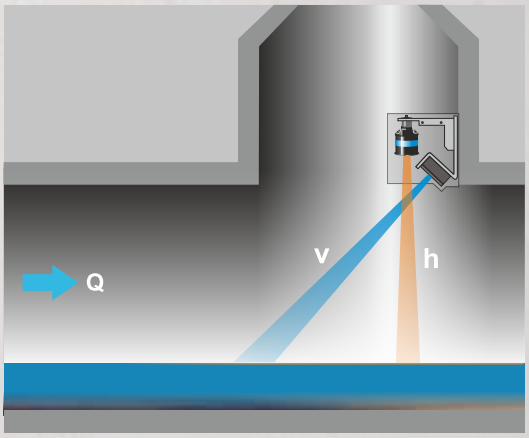
Contactless measurement with high dirt load or deposits



Shooting discharge and low flow levels

Flow metering with Radar

We measure the flow rate with radar by recording the flow velocities on the water surface. Reflections of the radar signals on waves are analysed using the Doppler principle. With the help of an additional level measurement and the known canal geometries, we can calculate the flow rate.



The average flow velocity (v) is calculated from the velocity at the water surface and by using integrated hydraulic models. The flow rate is calculated using the cross-section through which the water flows (A) and the average flow velocity. The wetted cross-section is determined by the existing geometry and the flow height (h).

$$Q = A_{(h)} \bullet v_A$$

$A_{(h)}$= Cross-sectional area
v_A= Average flow velocity in the cross-section

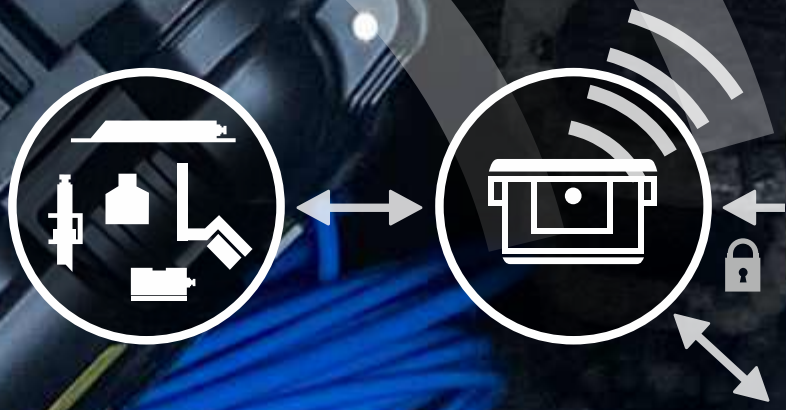
Radar sensor
with level mesaurement

Protective
enclosure

NIVUS WEB PORTAL

NIVUS DATA KIOSK

Complete solution for measurement data acquisition, data transmission, data management and remote diagnostics



Consistent communication concept

Our concept ranges from user-friendly, self-sufficient partial solutions to comprehensive complete solution for digitalisation. The NIVUS WebPortal provides data analysis, remote maintenance, alerting and logging in compliance with the authorities. Our NIVUS DataKiosk implements measured values in customer systems in the KRITIS environment.

Option for remote maintenance and remote diagnostics

- Overview: View and retrieve current measured values
- Evaluation: Extensive measured value and signal analyses
- Remote access: Direct parameter changes without time delay
- Diagnostics: Remote diagnosis by NIVUS customer centre and operator
- Control: Remote analysis of application behaviour

From sensor to cloud - everything from a single source

We provide an end-to-end solution, from energy-optimised sensor technology to stable data transmission and -provision in the cloud through to finished protocols and analyses. In conjunction with our IT security concept, this lays the foundation for an efficient measurement data network.


NIVUS
WEB
PORTAL
NIVUS
DATA
KIOSK
SCADA
smartphone
Measurement application with the NFM
NIVUS
WEB
PORTAL
Test the NIVUS WebPortal

NIVUS GmbH
75031 Eppingen, Germany
Tel. +49 7262 9191-0
info@nivus.com
www.nivus.de

NIVUS AG
8750 Glarus, Switzerland
Tel. +41 55 6452066
swiss@nivus.com
www.nivus.ch

NIVUS Austria
3382 Loosdorf, Austria
Tel. +43 2754 5676321
austria@nivus.com
www.nivus.de

NIVUS Sp. z o.o.
81-035 Gdynia, Poland
Tel. +48 58 7602015
biuro@nivus.pl
www.nivus.pl

NIVUS France SAS
75009 Paris, France
Tel. +33 1 89708767
info@nivus.fr
www.nivus.fr

NIVUS Ltd., United Kingdom
Coventry, CV3 4SU
Tel. +44 1926 632470
nivusUK@nivus.com
www.nivus.co.uk

NIVUS Middle East (FZE)
Business Bay Dubai
Tel. +971 4 4580502
middle-east@nivus.com
www.nivus.com

NIVUS Africa
Giza, Egypt
Tel. +20 2 35393975
sales@nivusaf.com
www.nivus.com

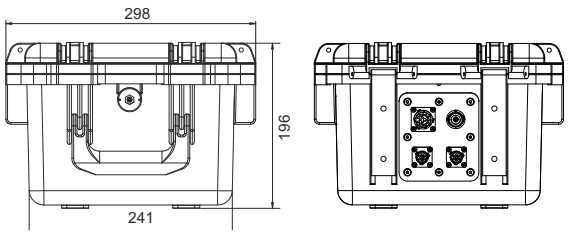
NIVUS Korea Co. Ltd.
21984 INCHEON,
South Korea
Tel. +82 32 2098588
jhkwon@nivuskorea.com
www.nivuskorea.com

NIVUS Vietnam
Bin Hoa City,
Dong Nai Province, Vietnam
Tel. +84 94 2623979
jhkwon@nivuskorea.com
www.nivus.com

NIVUS Ltd. India
600017 Chennai,
Tamil Nadu, India
Tel. +91 44 4065 2811
india@nivus.com
www.nivus.com

NivuFlow Mobile

Flow metering for clean and dirty media



NivuFlow Mobile 750

Flow Metering with patented Cross Correlation

Typical
areas of application

more info NFM 750

Measurements: Flow velocity v, flow level h, flow rate Q
Flow velocity v measuring range: −350 cm/s to +600 cm/s

NivuFlow Mobile 600

Clamp-On Transit Time Measurement

Typical
areas of application

more info NFM 600

Measurements: Flow velocity v, flow rate Q
Flow velocity v measuring range: -15 m/s to + 15 m/s
For pipe diameters fron DN50 to DN6000

NivuFlow Mobile 550

mobile Radar Flow Metering System

Typical
areas of application

more info NFM 550

Measurements: Flow velocity v, flow level h, flow rate Q
Flow velocity v measuring range: 0.15 m/s to 15 m/s

The technical details can be found in the respective operating instructions or on **www.nivus.com**