

Measurement On Stormwater Tanks With Overflow

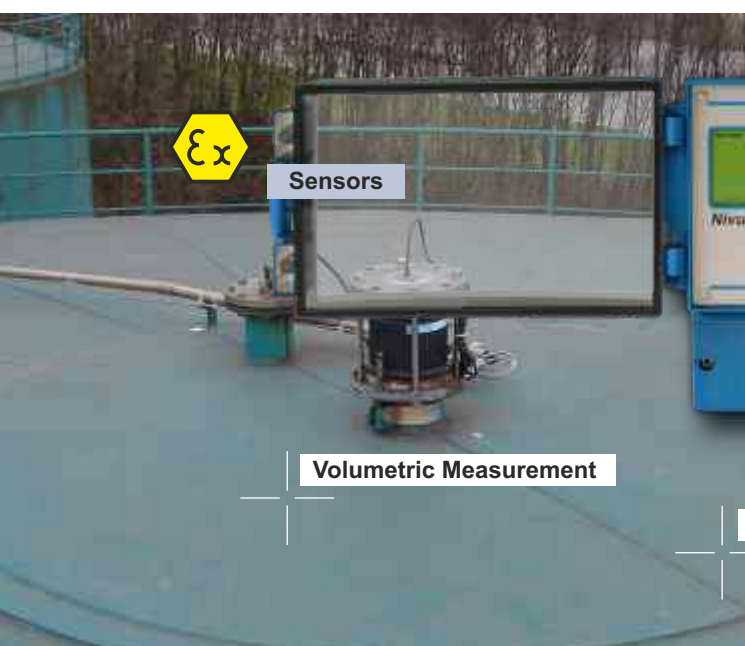


Volume Measurement

Pump Control



Comparative Measurement



Sensors

Volumetric Measurement



Distance Measurement



Limit Level Measurement

Level Measurement

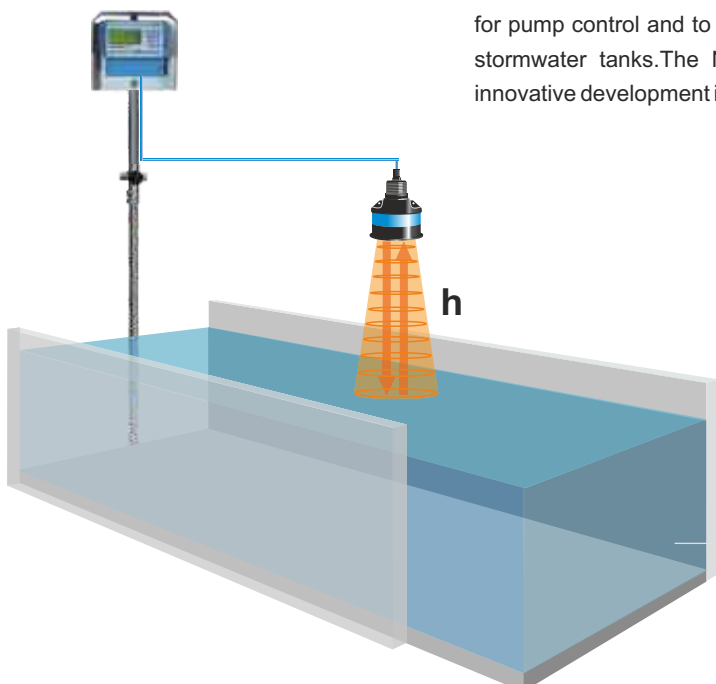
**NivuMaster**

One for all:  
NivuMaster  
the multifunctional  
universal device



## One for all - the NivuMaster handles any challenge

Always, when it comes to measure the fill levels and levels of liquids as well as bulk solids without being in contact with the liquid, the NivuMaster is the ideal universal device of choice. With the NivuMaster, you can not only measure and control the level, but also use it for pump control and to calculate flow rates in open channels and overflow volumes on stormwater tanks. The NivuMaster family combines many years of experience with innovative development in the field of ultrasonic measurement technology.



With the standard NivuMaster, you have the most universal ultrasonic device at your disposal that allows you to perform many application options with a single device. The NivuMaster reliably measures and performs control functions without the need for extra devices. This saves time, money, personnel and stock-keeping costs.

### Non-Contact Ultrasonic Level Measurement











*The sensor continuously transmits ultrasonic impulses which are reflected from the surface of the liquid. The reflected waves are detected by the sensor again. Level, distance or volume are calculated depending on the sound transit time.*

The ultrasonic sensors with integrated temperature compensation for connection to NivuMaster series transmitters provide many possibilities for measurement of liquids and bulk solids.

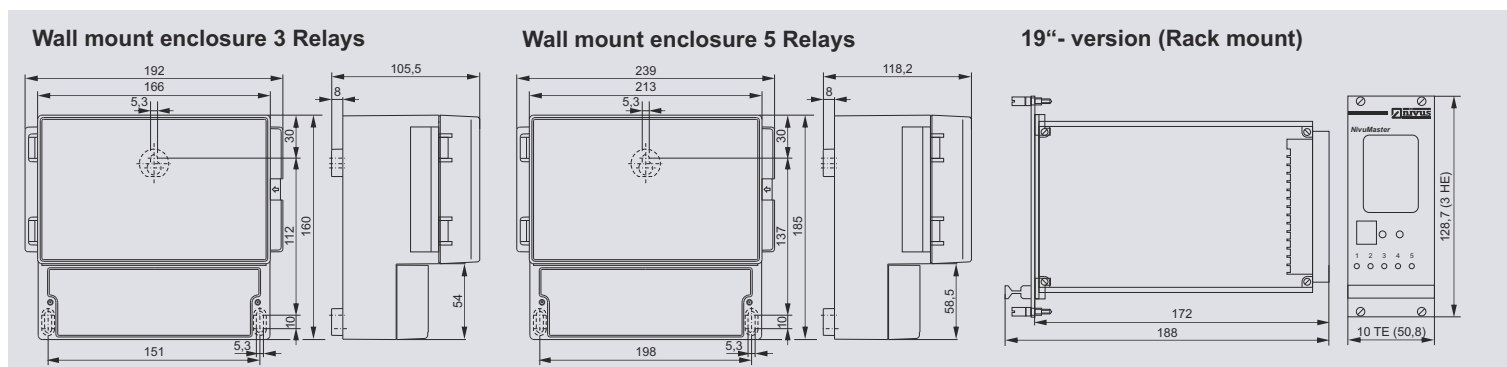
- Flexible installation: maximum cable length 1000 m; various flange versions available
- Very low in maintenance due to non-contacting measurement
- Versatile through measurement ranges from 0.07 m to 40 m
- Protection rating IP 68
- Versions with PVDF enclosure for use in aggressive liquids
- Safe operation through Ex approvals Zone 0, 1 and 2 according to ATEX

There are many extensions optionally available which are not particularly mentioned in the list, e.g. soft foam coatings or various flange versions

## The NivuMaster Transmitters: always the right solution

	NivuMaster L-2	NivuMaster 3 Relays	NivuMaster 5 Relays	NivuMaster LD-5:2	
					
Level measurement/ distance measurement 	++ / +	++	++	++	
Volumetric measurement/ empty space measurement 	++ / +	++	++	++	
Pump control/ slide valve control 	-	+	++	+	
Volume measurement 	-	++	++	+	
Comparative measurement 	-	-	+	++	
Measurement on stormwater overflow tanks 	-	++	++	+	
<b>Operation</b>					
Display	optional	+	+	+	
Keys	optional	+	+	+	
<b>Inputs</b>					
Sensors / optional 4-20 mA / digital	1 / - / -	1 / - / -	2 / optional 4-20 mA / -	2 / - / -	
<b>Outputs</b>					
Relays / mA-output	2 / 1	3 / 1	5 / 1	5 / 2	
RS232 interface	1	1	1	1	
<b>Construction</b>					
Wall mount IP65 / DIN rail mounting	IP66 / -	+ / +	+ / +	+ / +	
19" version (rack mount)	-	+	+	+	
Panel mount	-	+	+	+	
Ex approval according to ATEX	Zone 0, 1 and 2	Zone 0, 1 and 2	Zone 0, 1 and 2	Zone 0, 1 and 2	
	The NivuMaster L-2 is our cost-effective entry model.	For measurement of distance, level and volumes as well as for pump control and extended control tasks.	For measurement of distance, level and volumes as well as for pump control and extended control tasks.	Particularly designed for comparative measurements. Featuring two mA outputs for difference and filling level.	

### Dimensions

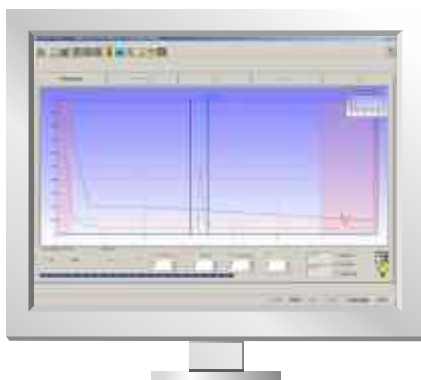






- Universal use for almost all liquids and bulk solids, measurement of level, distance, volume, difference and flow
- High measurement reliability through integrated agitator avoidance
- Easy echo analysis and setting of parameters via PC
- Up to 6 relays and galvanically isolated mA outputs
- Easy operation in dialog mode using back-lit graphic display
- Integrated emergency power switchover

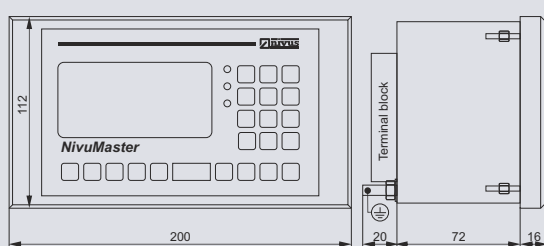
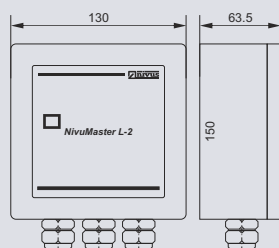
	+	+
	+	+
	1 / - / -	2 / opt. 4-20 mA / 7 dig.
	5 / 2	6 / 1
	1	1
	+	-
	+	+
	Zone 0, 1 and 2	Zone 0, 1 and 2
	Particularly designed for stormwater overflow tanks. For measurement and output of level and overflow volume.	Particularly designed for pump management, the NivuMaster Plus features 7 digital inputs.



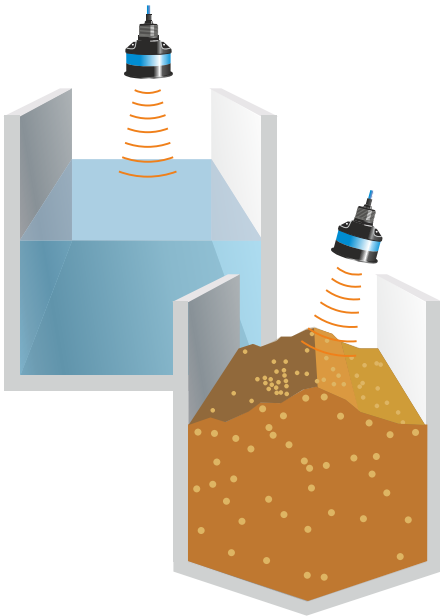
No matter if high accuracy of flow measurements, interference-proof digital echo analysis or difficult measurements – the NivuMaster can handle all tasks. The few parameters required for measuring can be easily entered using the plain text dialog, the backlit display and the keypad. Moreover, a serial interface allows to evaluate the readings using the serial interface as well as the “Ultra PC” software.

### Convenient evaluation of measurement data on PC

### Panel mount enclosure

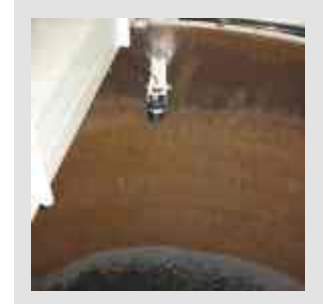


## NivuMaster: Versatility is its strength



### Level measurements

Non-contacting, maintenance-free level control and measurement in liquids and solids play an important role in the industrial and municipal areas. The high precision and operational safety is of importance in fulfilling these standards. The NivuMaster is an efficient measurement device that meets all these modern requirements for accurate measurements.



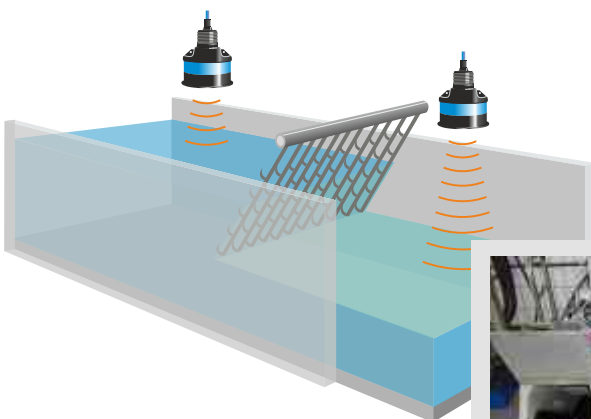
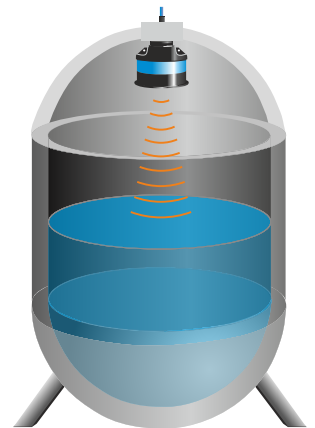
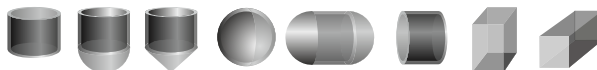
### Distance measurements

The NivuMaster measures the distance from the non-contacting sensor to the object. The performance and capability of the NivuMaster is diverse. Its versatility allows for various applications from loop regulation, roll thickness and water level measurements over time, positions, grates and crushers to determination of filter cake thickness, activated sludge blankets and mine tailings.



### Volumetric measurements

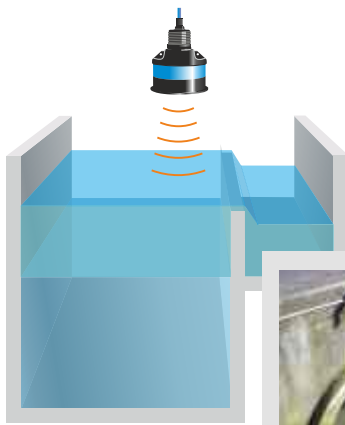
No matter what container size or shape, the NivuMaster can convert the level measurement into volume with the ability to store standard pre-programmed vessel shapes. Also, a non-standard shape can be freely programmed with custom linearisation capability in the NivuMaster.



### Comparative measurements

Differential measurements of water levels at the high and low levels at WWTP gates and screens using 2 ultrasonic sensors can be accomplished with the NivuMaster. All standards of differential measurements are possible with the NivuMaster.

The NivuMaster combines all standards required to meet the requirements of modern comparative measurement.



### Storm control / basin overflow measurements

No matter if basin fill level, overflow volume or trend – the NivuMaster can do it all. Specially designed for storm control applications, the NivuMaster is available with two analogue outputs. One sensor measures height and volume. Each output is available for the two measurements. With the trend monitoring capability, the stormbasin/ overflow chamber can be efficiently controlled and performance optimized.

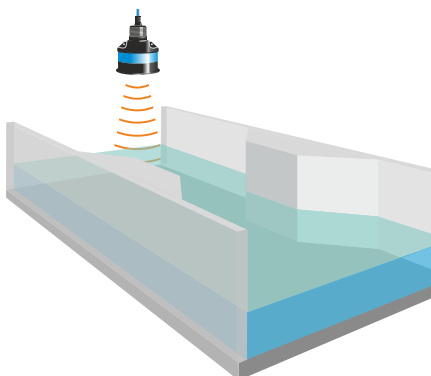
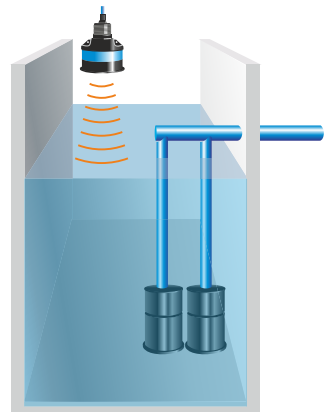


### Pump control

Comprehensive pump control of up to 6 pumps with special features as standard is possible with the NivuMaster pump manager. Two groups of pumps can be chosen. What previously was possible only by using additional devices can now be easily handled by the NivuMaster. Due to a runtime-based control it is possible to equally share the operation times of pumps as well as to optimize maintenance intervals. Even “grease rims” are no problem for the NivuMaster.

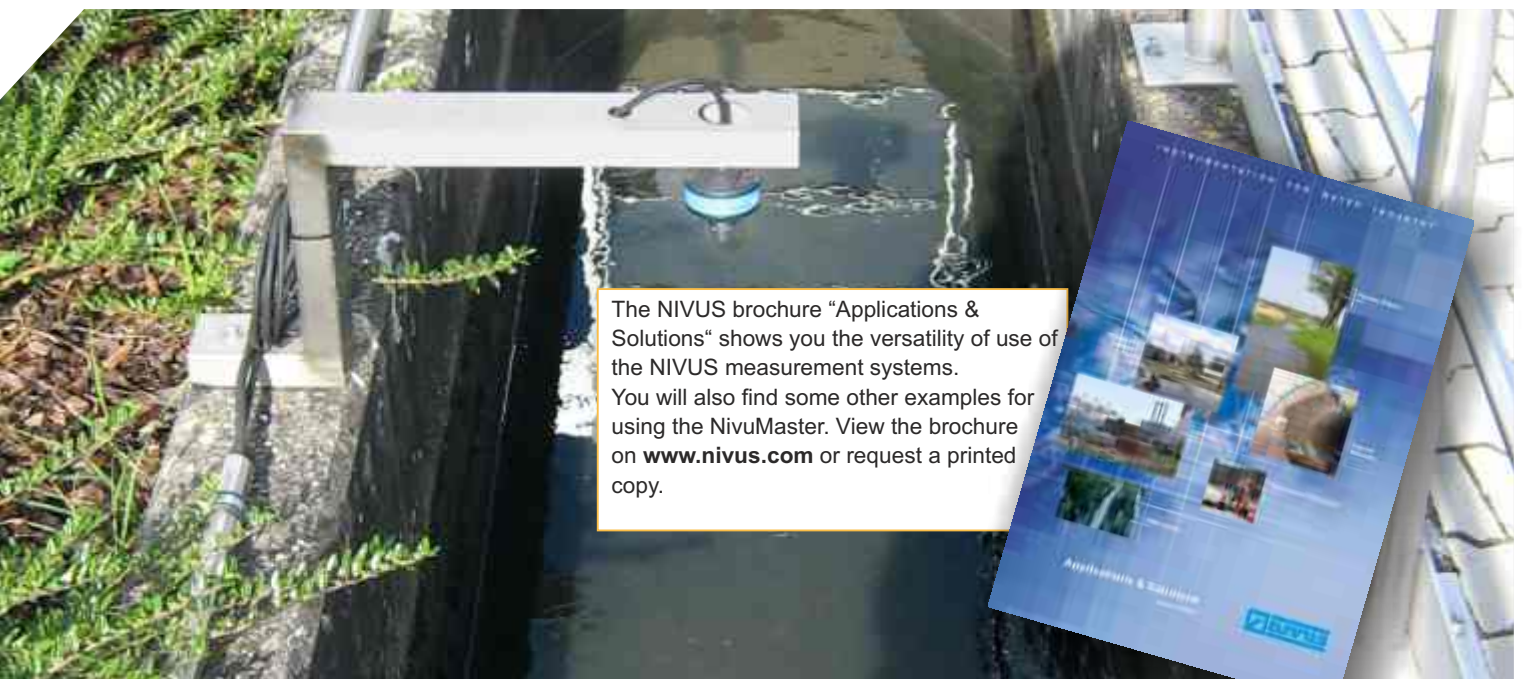
By programming pump switching points as area, the development of deposits on vessel walls is reduced strongly.

All the pump cycles can be programmed individually, no matter what type of pump exchanges exist.



### Quantity measurement

The NivuMaster measures flow in channels and overflow structures with highest precision. The most common standard channels and weir forms are integrated into the device and can be easily programmed. Furthermore, a linearisation curve can be set up easily. The graphic display shows the flow readings in the desired units.



The NIVUS brochure “Applications & Solutions” shows you the versatility of use of the NIVUS measurement systems. You will also find some other examples for using the NivuMaster. View the brochure on [www.nivus.com](http://www.nivus.com) or request a printed copy.

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## Universal Mounting Set

Our Vario Mounting Set for quick and easy installation is perfectly matched for the NivuMaster.

- Easy installation of sensors and transmitters
- Robust construction made of stainless steel

If you should have particular mounting issues we are at your disposal at any time. We will put together an appropriate sensor mounting set for your application out of our vario mounting components.

**Detailed drawings are available upon request!**

