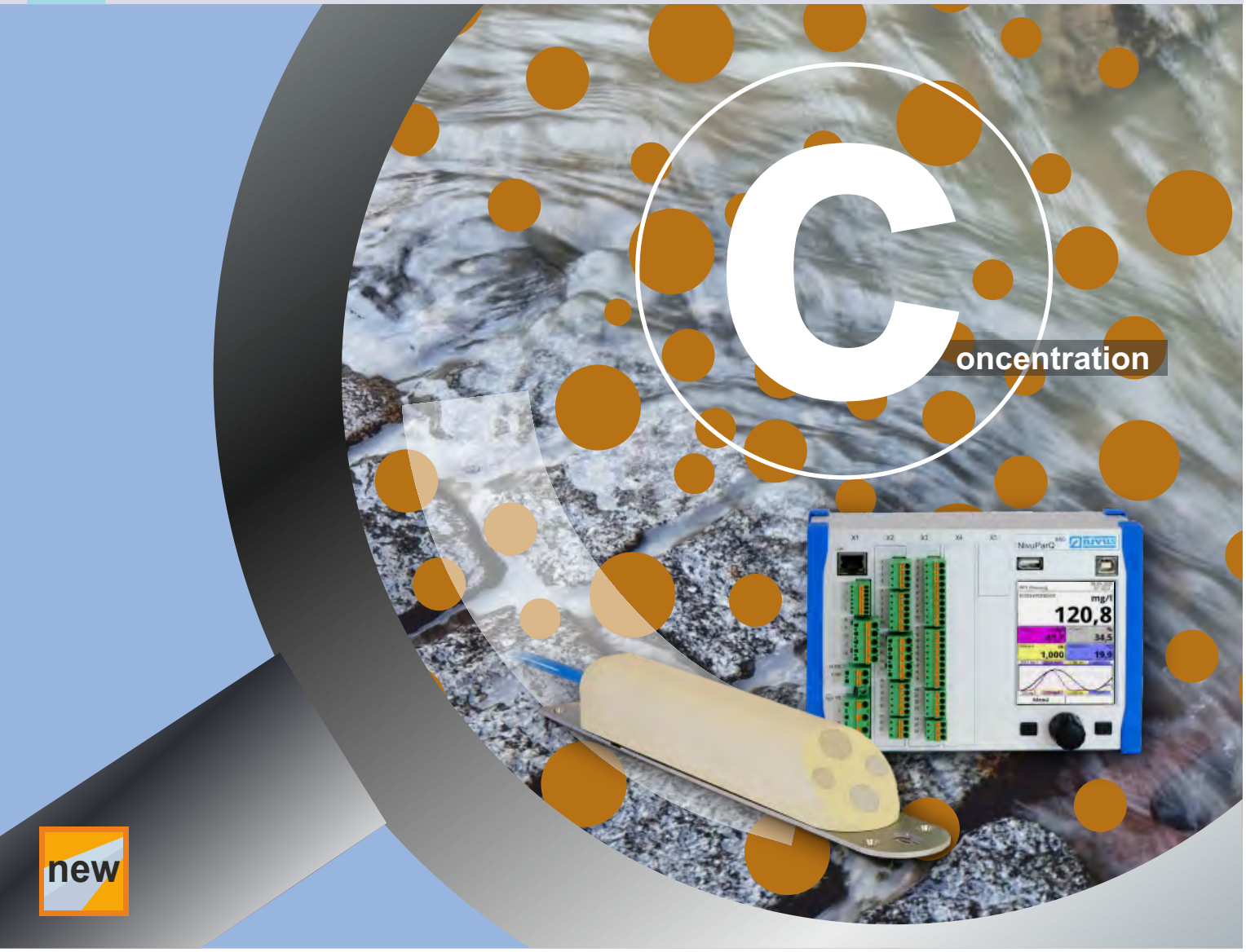
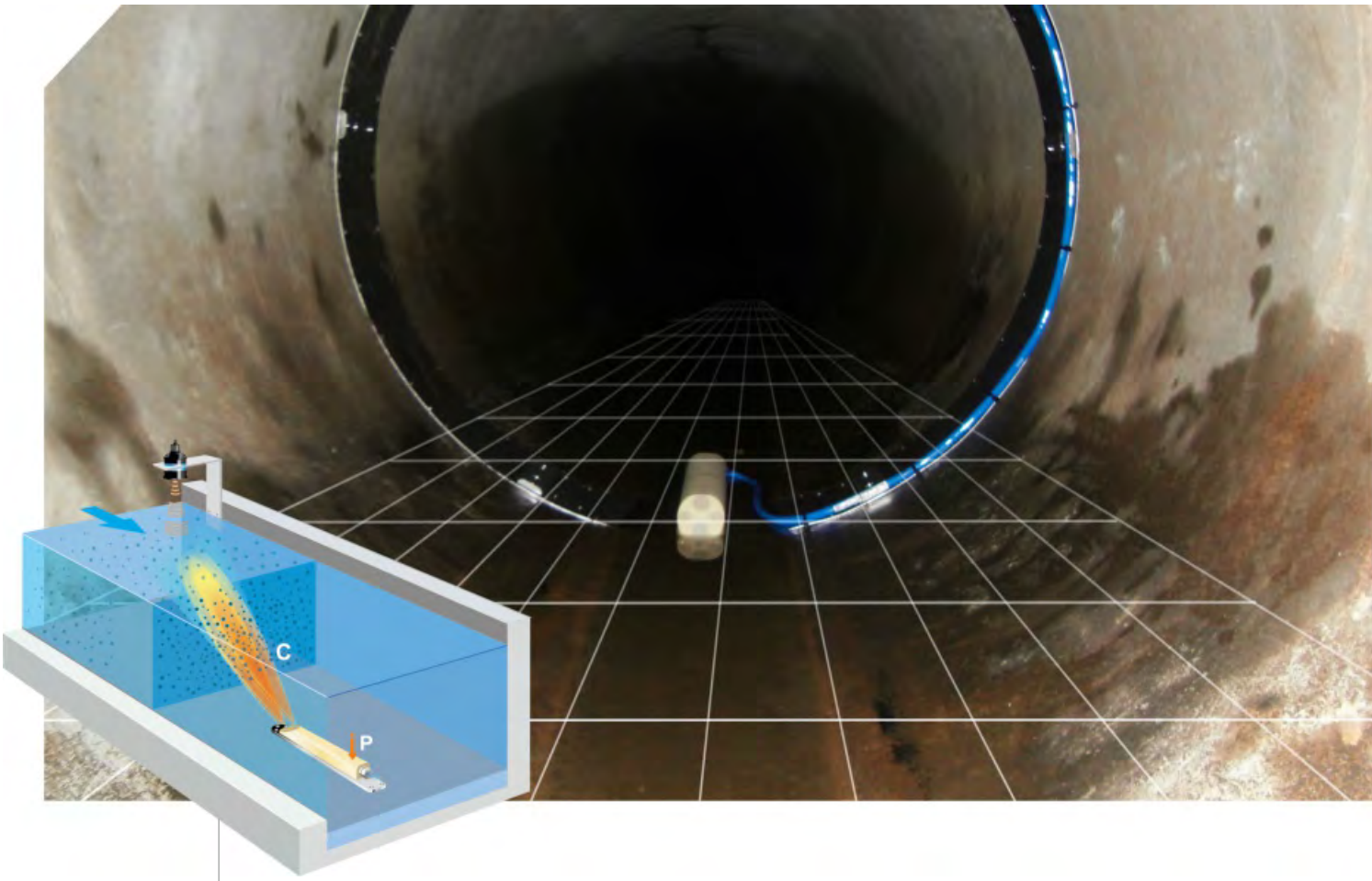
measure analyse optimise

NivuParQ 850



new

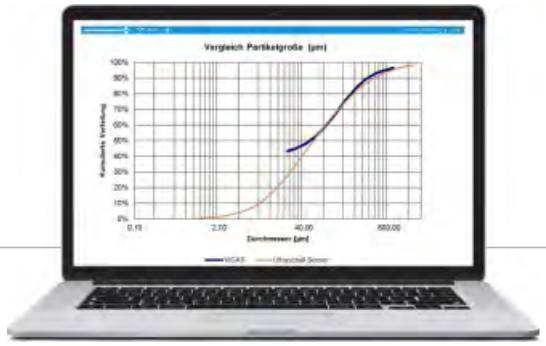
Particle Concentration Measurement in Water Industry



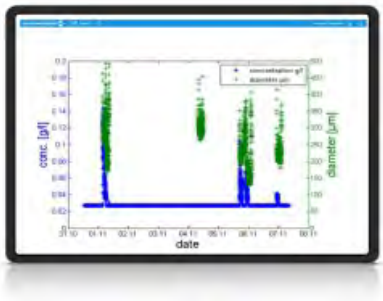
Particle Concentration Measurement

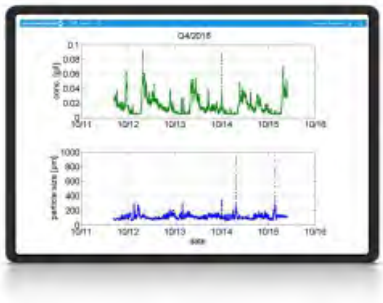
measure. continuously. easily. maintenance-free.

The determination of solids concentrations with the parameter TSS (total suspended solids) is becoming more and more important.
With NivuParQ 850 you can easily carry out permanent particle concentration (TSS equivalent) measurements in rainwater, combined water and flowing water. The low-maintenance system is used in part filled and full channels, ducts and pipes with of various shapes and dimensions. The measurement technology is based on ultrasonic backscattering and uses complex algorithms to record both the particle concentration (TSS equivalent) and the particle size distribution (incl. fine fraction smaller than 63 µm) in the water. In combination with a flow measurement, the summed load can be determined.



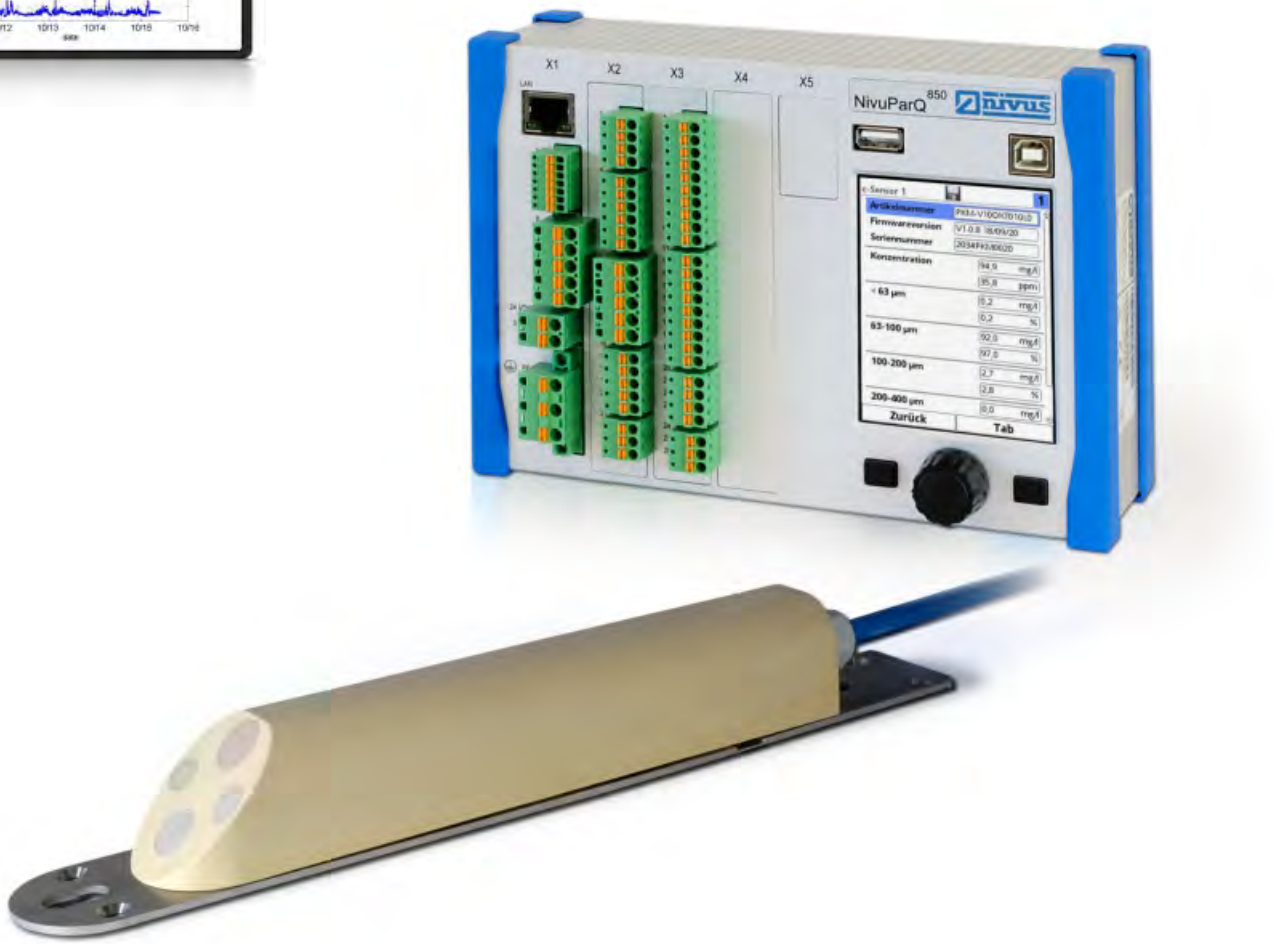
Real-time control of the rainwater based on the suspended solids concentration.
Starting at 100 mg/l the water is redirected to the cleaning stage





Benefits and Properties

- Continuous measurement of particle concentration (TSS equivalent) with new ultrasonic measurement method using multi-frequency echo
- Determination of 5 classes of particle sizes including the fine fraction < 63 µm
- Very low operating costs, as no time-consuming sampling with laboratory analysis is required
- Easy installation as well as quick and easy operation
- Low-maintenance and reliable measurement system
- Low investment costs for the measurement place setup
- Approval of the measurement system for use in potentially explosive environments
- Additional measurement parameters through integrated temperature and level measurement



Possible Applications

One possible application is the measurement of the precipitation-related dirt load in stormwater discharge. You can also use NivuParQ 850 to analyse the actual retention effect of stormwater treatment plants in drainage systems. The measurement data serve as a basis for optimal dimensioning of treatment structures. Another possible application is real-time control based on particle concentration in sewer networks with separation systems.

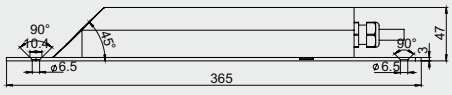
Technical Information

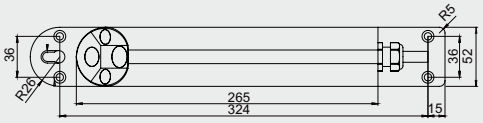
Subject to changes. 07. 2022

Measurement Conditions	
Medium type	clean to slightly polluted water such as stormwater
Minimum filling level	≈ 15 cm
Channel dimensions	min. DN 250
Channel shapes	all
Mass density	1100…2650 g/l

Particle Concentration Measurement	
Measurement principle	multi-frequency echo
Measurement frequencies	1, 2, 3, 4, 6, 7 and 9 MHz
Particle size classes	< 63 µm / 63…100 µm / 100…200 µm / 200…400 µm / 400...1000 µm
Measurement range concentration	50…6000 mg/l, 10…6000 mg/l at low noise values

Sensor Properties

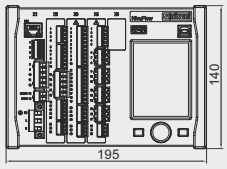


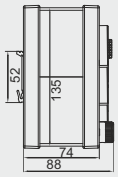


Dimensions in **mm**

Protection	IP68
Ex Approvals submitted	II 2G Ex ib IIB T4 Gb / Ex ib IIB T4 Gb ATEX: TÜV 20 ATEX 268840 X IECEx: TUN 20.0009X
Operation temperature	-20 °C…+50 °C / Ex version -20 °C…+60 °C / non-Ex version
Operation pressure	max. 4 bar without pressure measurement cell; max. 1 bar with pressure measurement cell
Cable lengths	10 / 15 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100 m
Medium-contacting materials	Polyurethane / stainless steel 1.4571 / PPO GF30 / PEEK without and with pressure measurement cell; Hastelloy® with pressure measurement cell
Temperature Measurement	
Measurement range	-20 °C…+60 °C
Measurement uncertainty	±0.5 K
Level Measurement – Pressure	
Measurement range	0…500 cm
Zero point drift	max. 0.75 % of final value (0…50 °C)
Measurement uncertainty	< 0.5 % of final value

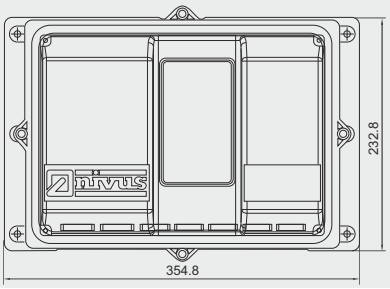
Transmitter

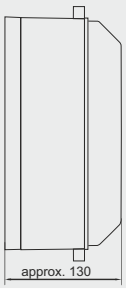




Enclosure for DIN rail mounting

Field enclosure





Dimensions in **mm**

Supply power	100 - 240 V AC, 47 to 63 Hz or 10 - 35 V DC
Protection	IP 20 (installation in control cabinet), IP 68 (field enclosure)
Operation temperature	DC: -20°C bis +70°C, AC: -20°C to +65°C, max. humidity 80%, non-condensing
Display	240 x 320 pixel, 65536 colours
Operation	rotary pushbutton, 2 function buttons, menus in German, English, French and other languages
Data memory	1.0 GB internal memory, can be read out via USB stick, frontside
Communication	Modbus TCP via networks (LAN/WAN, Internet), Modbus RTU via RS485 or RS232, Ethernet TCP/IP

The complete specifications can be found in the instruction manual or on **www.nivus.com**

NIVUS GmbH
Head Office
Im Taele 2
75031 Eppingen, Germany
Phone: +49(0)726291910
Fax: +49(0)72629191999
info@nivus.com
www.nivus.com

NIVUS AG
8750 Glarus, Switzerland
Phone: +41(0)556452066
swiss@nivus.com

NIVUS Austria
3382 Loosdorf, Austria
Phone: +43 (0)27545676321
austria@nivus.com

NIVUS Sp. z o.o.
81-212 Gdynia, Poland
Phone: +48(0)587602015
biuro@nivus.pl

NIVUS France
67870 Bischofsheim, France
Phone: +33(0)388999284
info@nivus.fr

NIVUS Ltd.
CV33 9BW, Warwickshire, UK
Phone: +44(0)1926632470
info-uk@nivus.com

NIVUS Middle East (FZE)
Sharjah Free Zone, UAE
Phone: +9716 5578224
middle-east@nivus.com

NIVUS Korea Co. Ltd.
Incheon, Korea 21984
Phone: +82322098588
korea@nivus.com

NIVUS Vietnam
Hanoi, Vietnam
Phone: +841204467724
vietnam@nivus.com