



UWT
LEVEL CONTROL



“With heart and soul – and smooth co-operation“



When we started, over 40 years ago, with the development of our ingenious products, no one could have foreseen the unparalleled success story that followed. UWT has become one of the leading suppliers of measurement technology on the world market today for the level detection in silos and material manufacturing processes. Names of e.g. Rotonivo®, Vibranivo® and Nivobob® represent quality, flexibility and reliability in over 60 countries across the world. Having successfully solved over a million applications within the bulk solids sector, we will in 2018 expand further into the liquids market by introducing our new and innovative range of products/product range to deliver reliable solutions for applications in this area.

The development, production and sales departments are located at our headquarters in Germany, with a further production site in Malta. UWT has also established successful sales offices in the USA, UK, China, India and most recently Russia. With this global orientation, we are able to serve and support our customers with complete competence and flexibility. From development through production to final assembly and comprehensive technical advice, we can offer a complete service from a single source. Focus is placed on delivering the highest quality products, technical expertise and a good working relationship with customers, suppliers and partners. The strongly held belief by CEO Uwe Niekrawietz is for the welfare of over 140 employees world-wide: „Healthy and happy employees can make the unbelievable happen“.

Every year, our product portfolio evolves, develops and brings about solutions for a variety of industries. As well as providing level measurement we also offer monitoring and visualisation systems, together with complete project planning. Renowned plant manufacturers and end users around the world appreciate our ability to deliver customised solutions for their applications, as well as the ease of use and durability of the UWT sensors. Our strategy in the consistent monitoring of our own steady and sustainable growth allows us to provide the best value solutions for our customers.



Awarded for innovative
industrial solutions

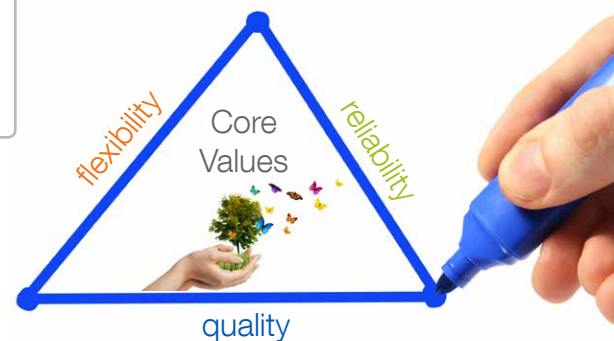


Headquarters in Betzigau, Germany

Our mission

We are guided by our company characteristics: responsibility, enterprising as well as challenging and stimulating. Our company values: **quality**, **reliability**, **flexibility** form our strategic direction and guide us when dealing with colleagues, customers or business partners alike.

	UWT Mission	
	Quality:	Product performance 99,8 %
	Reliability:	Competent employees and long-lasting products
	Flexibility:	Customer orientation and satisfaction



Your team for innovative measurement technology

As a German small and medium-sized enterprise (SME) and family run business, for the past years we have become the world's competent partner for level measurement technology. A company reaches such a position only if the following key elements interact: Sound management, good understanding of the needs of the markets, innovative product solutions, skillful investment and above all, committed and dedicated employees.



ADM
 Anheuser-Busch
 AZO
 Baosteel Group
 BASF
 BAYER
 Baxter
 Beck's
 BMW
 Bridgestone
 Camfil APC
 Cargill
 Colabeton
 Colgate-Palmolive
 Coperion
 Evonik
 Derichs GmbH
 Dr. Oetker
 Dynamic Air
 Lafarge
 Heidelberger Zement
 Heinz
 Italcementi
 Liebherr
 Manes
 Protec
 maxit-Group
 MOTAN
 m-tec
 MVV Umwelt O&M
 Nestlé
 Owens Corning
 Pirelli
 Reimelt
 Schenck Process
 Siemens
 Starbucks
 Unilever
 Veka
 VW
 Zeppelin

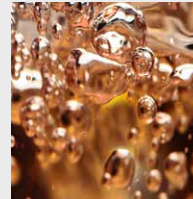
Our core industries



Building & Cement



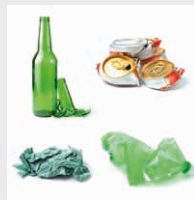
Chemicals



Food



Animal Feed



Environment & Recycling



Power



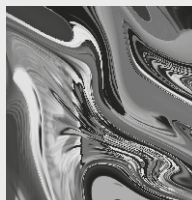
Synthetics



Wood



Rubber



Metal



Glass



Others

Approvals world-wide



Quality Certificates



Our products

Rotonivo®

Rotary Paddle Level Switch for **SOLIDS**



A motor driven shaft causes a vane to rotate. Once the material level reaches the vane, thereby preventing further rotation, switches are activated which result in an output signal and the motor stops. When the vane is free again from material, the output signal is reset and the motor driven shaft rotates again.



RN 3000



RN 4000



RN 6000



RN 3002 Pipe



RN 3002 Rope



Our Solutions for:

- Strong caking
- Dusty environments
- Abrasive materials
- Extreme process temperature
- Over pressure and low pressure environments
- Heavy mechanical loading
- Electrostatic charging
- Variable parameters
- Explosive environments
- EHEDG applications

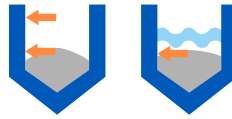
Special Features:

- ✓ Universal voltage electronics
- ✓ Adjustable sensitivity (>15g/l)
- ✓ Rotation principle unaffected by caking
- ✓ Robust aluminium die cast housing
- ✓ Protected motor (friction clutch & double bearing)
- ✓ Modular design
- ✓ Pipe and metal rope extension
- ✓ Temperature range from -40°C to +1,100°C
- ✓ High quality grade stainless steel (process)
- ✓ Long lifespan (brushless synchronised motor)
- ✓ RN 6000 is world's first rotating level limit switch compliant to **SIL 2**

Vibranivo®

Vibrating Level Switch for SOLIDS

Electronically stimulated piezos cause the fork to vibrate. As soon as the sensor is covered with material, the vibration is dampened and the resulting electrical current change causes the output signal to switch. Once the material level falls below the sensor it is free to vibrate again and the output signal is reset.



VN 1000



VN 2000



VN 4000



VN 5000



VN 6000



Our Solutions for:

- Extremely light product density
- Pneumatic filling
- Process overpressure
- Limited space
- Vibration within the vessel
- High reliability requirements
- High hygienic requirements
- Explosive environments
- Sediment levels in liquids
- EHEDG applications

Special Features:

- ✓ 2-wire instrument
- ✓ Very high sensitivity (< 5g/l - Vibrasil®)
- ✓ Surface roughness of 0.75µm
- ✓ High quality material in the process (SS 316L)
- ✓ Cable and pipe (screwed) extension
- ✓ Suitable for overpressure up to 16bar
- ✓ Temperature range from -40°C to +150°C
- ✓ Extremely robust short version
- ✓ PFA and Teflon coating
- ✓ NAMUR Standard
- ✓ Level control of sediments in liquids

Mononivo®

Vibrating Level Switch for SOLIDS

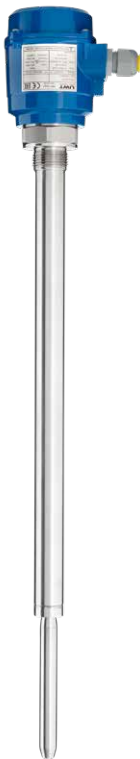


Electronically stimulated piezos cause the single rod probe to vibrate. When the material covers the sensor, this causes the vibration to stop and a voltage change is caused within the piezo elements. This is electronically registered and causes the output signal to switch.

MN 4020



MN 4030
Pipe



MN 4040 Pipe
screwed



Our Solutions for:

- Light products from 20g/l
- Powdery material with strong caking properties
- Coarse-grained granulate
- Pneumatic filling
- Process overpressure
- Limited space
- Overfill detection within pipes and shafts
- Vibration within the vessel
- High safety standard
- High hygienic requirements
- Explosive environments

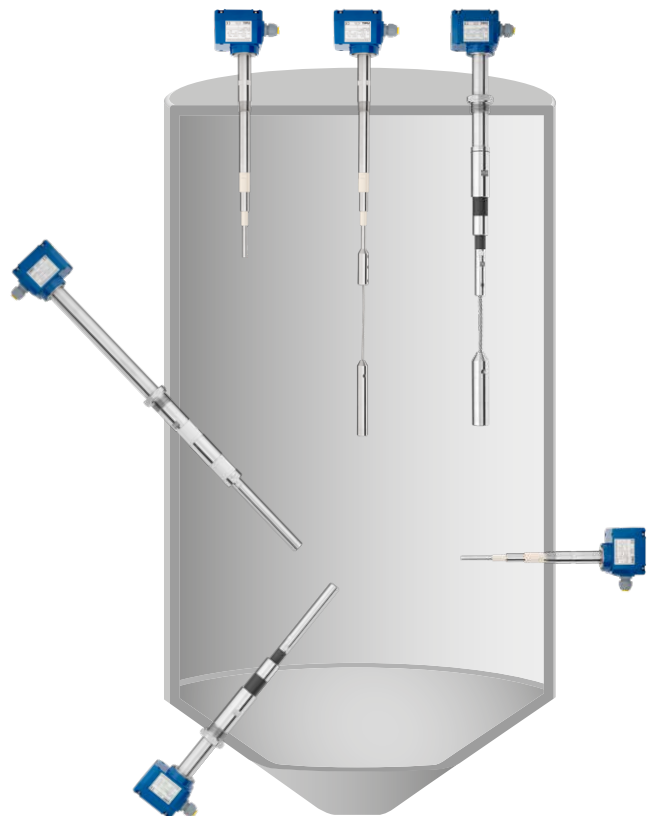
Special Features:

- ✓ Compact limit switch with threads from 1"
- ✓ Sensitivity adjustable in 4 settings
- ✓ High surface quality
- ✓ High quality material in the process (SS 316L)
- ✓ Heavy mechanical loading
- ✓ Robust version for overpressure up to 16bar
- ✓ Temperature range from -40°C to +150°C
- ✓ Pipe extension (screwed)

RFnivo®

Capacitance Level Switch for SOLIDS

The capacitive level limit switch is automatically calibrated to a reference capacitance of an empty vessel. If the probe is covered by the product, the measured capacitance changes through the dielectric and a switching signal is activated. The integrated "Active Shield" technology ensures high reliability even for products that cause caking.



RF 3100



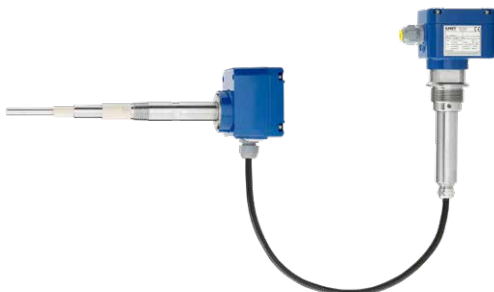
RF 3200



RF 3300 Temp.



Remote Version



Our Solutions for:

- Heavy materials
- Dusty environments
- Abrasive and aggressive media
- Extreme process temperatures
- Positive and negative pressure
- Caking material
- Vibration in the vessel
- Hazardous areas
- EHEDG applications

Special Features:

- ✓ Very high sensitivity (DK >1.5)
- ✓ High mechanical load
- ✓ Simple to install and set up
- ✓ High quality process materials (SS 316L, ceramics, PPS)
- ✓ High hygiene requirements
- ✓ Rod and metal rope extension
- ✓ Robust version for overpressure up to 25bar
- ✓ Temperature range from -40°C up to +500°C
- ✓ RF 3100 PROTECTION PLUS version with anti-corrosive coating (PFA Teflon®)

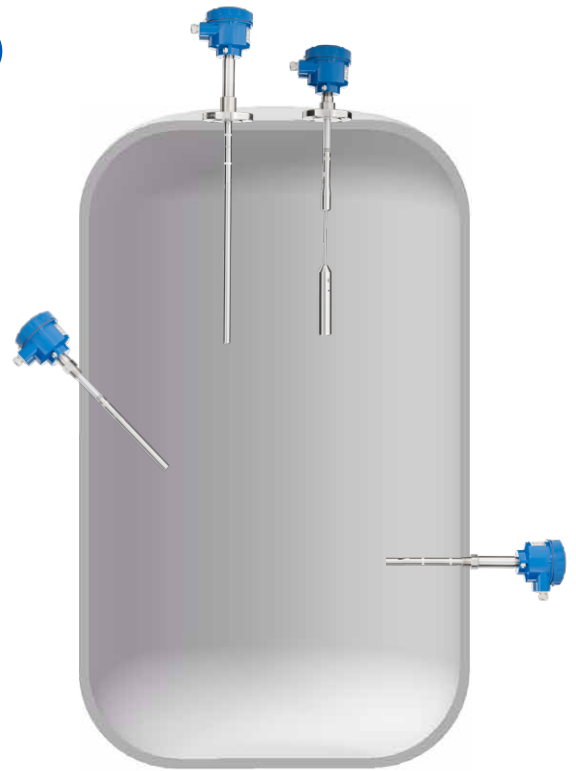


Inverse Frequency Shift Technology

Capacitance Level Switch for LIQUIDS



The capacitive measuring limit switch responds to the change in capacitance at the probe, which is detected by the change in the oscillating frequency. The integrated “Active Shield” technology ensures high reliability even for products that cause caking.



RF 8100 Rod



RF 8200 Temp. Rod



Our Solutions for:

- All kinds of liquids
- Very strong caking
- Process overpressure
- Vibrations within the process
- Corrosion resistance in aggressive materials
- High process temperatures
- High safety standard
- Hygiene versions
- Explosive environments
- Interface measurement

Special Features:

- ✓ Potted electronics
- ✓ Very high sensitivity ($DK \geq 1,5$)
- ✓ Functionality independent of silo wall
- ✓ Digital electronics with Profibus PA, integrated display and operating menu
- ✓ Programmable electronics
- ✓ Rod and metal rope extension (up to 25m)
- ✓ Robust version for overpressure up to 35bar
- ✓ Temperature range from -40°C up to $+400^{\circ}\text{C}$
- ✓ ESD protected probe
- ✓ WHG certification

RF 8100 Rope



RF 8200 Temp. Rope



Capanivo®

Capacitance Level Switch for SOLIDS

The electrodes in the sensor form a capacitor. If the product comes into contact with the sensor, the capacitance changes and the electronics converts it into a switching signal. The integrated "Active Shield" technology allows this system to be used in particularly adhesive materials.



CN 4020



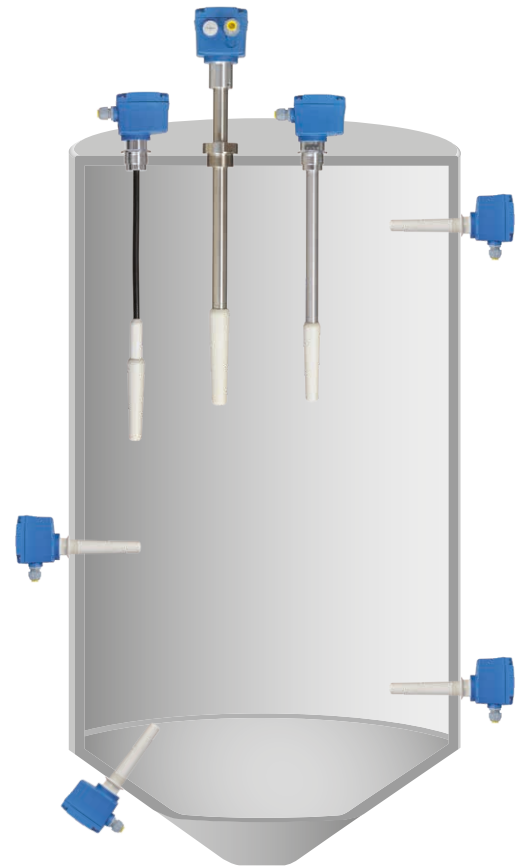
CN 4020 Temp.



CN 4030 Pipe



CN 4050 Cable



Our Solutions for:

- Light materials
- Dusty environments
- Pneumatic filling
- Overpressure
- Very strong caking
- Corrosion resistance for aggressive material
- High process temperature
- High standard of safety requirement
- Explosive environments

Special Features:

- ✓ Very high sensitivity ($DK \geq 1.6$)
- ✓ Functionality independent of silo wall
- ✓ Range of process connections
- ✓ Adjustable switching delay
- ✓ Variety of mechanical versions
- ✓ Pipe and cable extension
- ✓ Overpressure up to 25bar
- ✓ Temperature range from -40°C to $+180^{\circ}\text{C}$
- ✓ Food compliant version



Inverse Frequency
Shift Technology

Capacitance Level Switch for LIQUIDS



The electrodes in the sensor form a capacitor. If the product comes into contact with the sensor, the capacitance changes and the electronics converts it into a switching signal. Available as integrated cable or enclosure version.

The integrated "Tip Sensitivity" technology guarantees a high level of functional reliability even for products that cause caking.

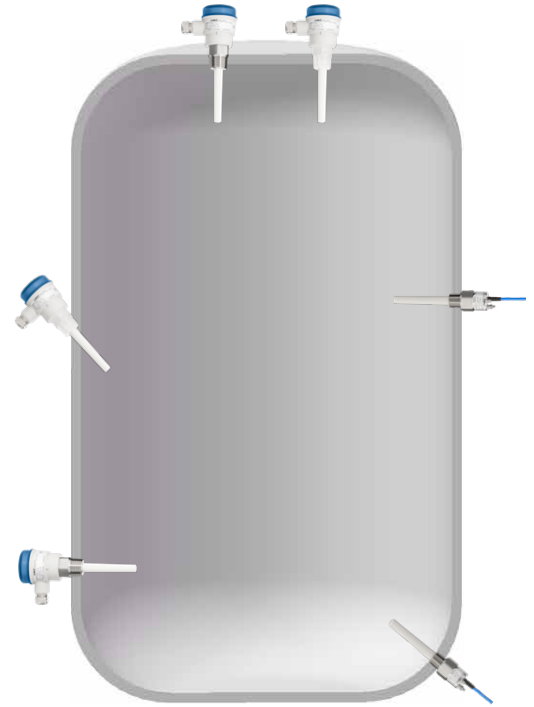
CN 7100
Enclosure Version



CN 7100
Synthetic Version



CN 7100
Integrated Cable Version



Our Solutions for:

- All kinds of liquids
- Strong caking
- Limited space
- Corrosion resistance in aggressive materials
- High safety standard
- Hygiene versions
- Explosive environments
- Variable parameters
- Interface measurement

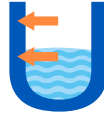
Special Features:

- ✓ 2-wire instrument
- ✓ Very high sensitivity ($DK \geq 1,5$)
- ✓ Functionality independent of silo wall
- ✓ Optional PVDF probe
- ✓ SensGuard cover
- ✓ Enclosure or integral cable version
- ✓ Synthetic version available
- ✓ Robust version for overpressure up to 10bar
- ✓ Temperature range from -30°C up to $+100^{\circ}\text{C}$
- ✓ WHG certification



Inverse Frequency
Shift Technology

Capacitance Level Switch for LIQUIDS



The electrodes in the sensor form a capacitor. If the product comes into contact with the sensor, the capacitance changes and the electronics converts it into a switching signal.

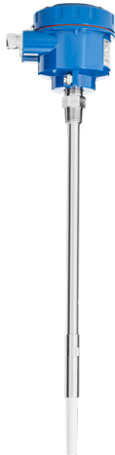
The integrated "Tip Sensitivity" technology guarantees a high level of functional reliability even for products that cause caking.



CN 8100



CN 8100
Pipe



CN 8100
Cable



Our Solutions for:

- All kinds of liquids
- Strong caking
- Process overpressure
- Vibrations within the process
- Corrosion resistance in aggressive materials
- High safety standard
- Hygiene versions
- Explosive environments
- Interface measurement

Remote Version



Special Features:

- ✓ Potted electronics
- ✓ Very high sensitivity ($DK \geq 1,5$)
- ✓ Functionality independent of silo wall
- ✓ Digital electronics with Profibus PA, integrated display and operating menu
- ✓ Range of process connections
- ✓ Variety of mechanical versions
- ✓ Rod and cable extension (up to 30m)
- ✓ Robust version for overpressure up to 25bar
- ✓ Temperature range from -40°C up to $+125^{\circ}\text{C}$
- ✓ SensGuard cover
- ✓ WHG certification

NivoCapa®

Inverse Frequency
Shift Technology

Capacitance Level Transmitter for LIQUIDS

The sensor measures the electrical capacity of the level in the tank. The integrated "Active Shield" technology allows this system to be used in particularly adhesive materials.



NC 8100 Rod



NC 8100 Rope



Our Solutions for:

- All kinds of liquids
- Very strong caking
- Corrosion resistance in aggressive materials
- Large measurement distances
- High safety standard
- Hygiene versions
- Explosive environments
- Variable parameters

Special Features:

- ✓ 2-wire instrument
- ✓ Very high sensitivity ($DK \geq 1,5$)
- ✓ High chemical resistance
- ✓ Rod and metal rope extension (up to 25m)
- ✓ Robust version for overpressure up to 35bar
- ✓ Temperature range from -40°C up to +200°C
- ✓ ESD protected probe
- ✓ PFA Teflon® coating
- ✓ Programmable electronics
- ✓ Fully adjustable range:
Level, damping, diagnosis etc.

Nivobob®

Electro-mechanical Plumb Bob for SOLIDS

A sensor weight attached to either a metal tape or rope is electromechanically lowered into the vessel. Once the sensor weight rests on the material, the winding direction of the motor changes and the sensor weight is rewound to the upper stop position. As the weight is lowered, the distance is electronically measured.

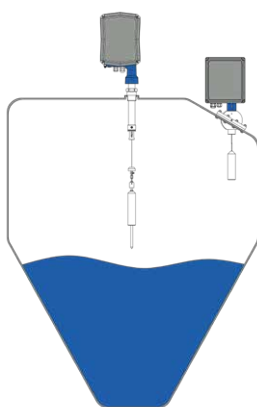
Microprocessors convert the measured distance together with the programmed silo geometry into a volumetric output signal. This signal is updated each time the sensor weight is lowered.



NB 3000



NB 4000 Aiming flange



Sensor weights



Our Solutions for:

- Strong caking
- Material with changing temperature and humidity
- Electrostatic charging
- Heavy material as well as light solids
- Limited space
- Low dielectric constant
- High process temperatures
- Large measurement distances
- Explosive environments

Special Features:

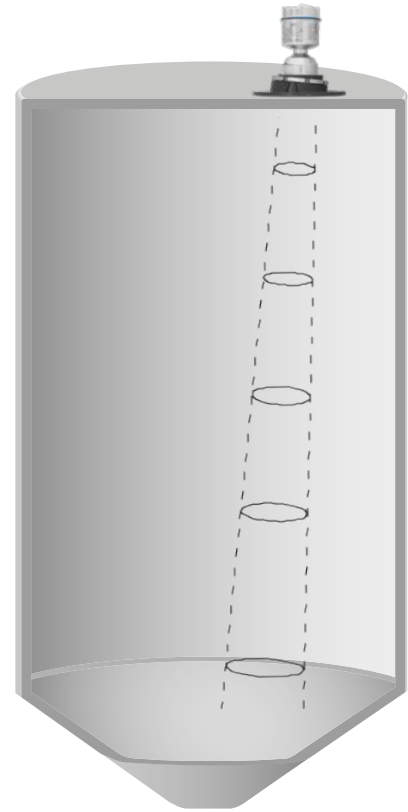
- ✓ High sensitivity (>20 g/l) dep. on sensor weight
- ✓ Rope and tape version
- ✓ Measurement range of up to 50m
- ✓ Overpressure version up to 1.7bar
- ✓ Temperature range from -40°C to +250°C
- ✓ Service life up to 500,000 cycles of tape version
- ✓ Integrated tape cleaner
- ✓ Diagnostics function
- ✓ Simple installation and set up
- ✓ Comm. via Modbus RTU or Profibus DP

NivoRadar®

Radar Sensor for SOLIDS



A high frequency signal is transmitted with a very small beam angle with a two-wire technology. It is reflected by the bulk material and received back to the sensor. The frequency difference, which is directly proportional to the distance, is then further processed and output as the level signal. The small beam angle makes the use in tall tight silos possible and facilitates the installation and alignment of the sensor.



NR 3000 Flange versions

Flat flange



Aiming flange



Functions

Electronics with
78GHz frequency

Integrated
lens cleaner

Aiming flange
up to max. 10°



Signal processing with
Process-Intelligence-
Software

Lens antenna with
4° beam angle

Programming module



Plug-on-display:

Programming
Input starting parameters
Display level and diagnostic data

Our Solutions for:

- Very light material
- Various application industries
- Dusty environment
- Measurement range of up to 100m
- Use within tight, high silos
- Optimum reflection of the bulk solids material
- Corrosion resistance for aggressive material
- High process temperature
- Perfect positioning
- Explosive environments

Special Features:

- ✓ Signal processing with Process-Intelligence-Software
- ✓ 2-wire instrument
- ✓ High sensitivity ($DK \geq 1.6$)
- ✓ 78 GHz technology
- ✓ 4° beam angle
- ✓ Lens antenna and mounting flange are flush
- ✓ Integrated lens cleaner
- ✓ Robust stainless steel housing IP68
- ✓ Aiming flange model
- ✓ Temperature solution up to +200°C
- ✓ Plug-on-display
- ✓ Quick Start Wizard
- ✓ Simple, six-step commissioning

Nivotec®

Level monitoring and visualisation

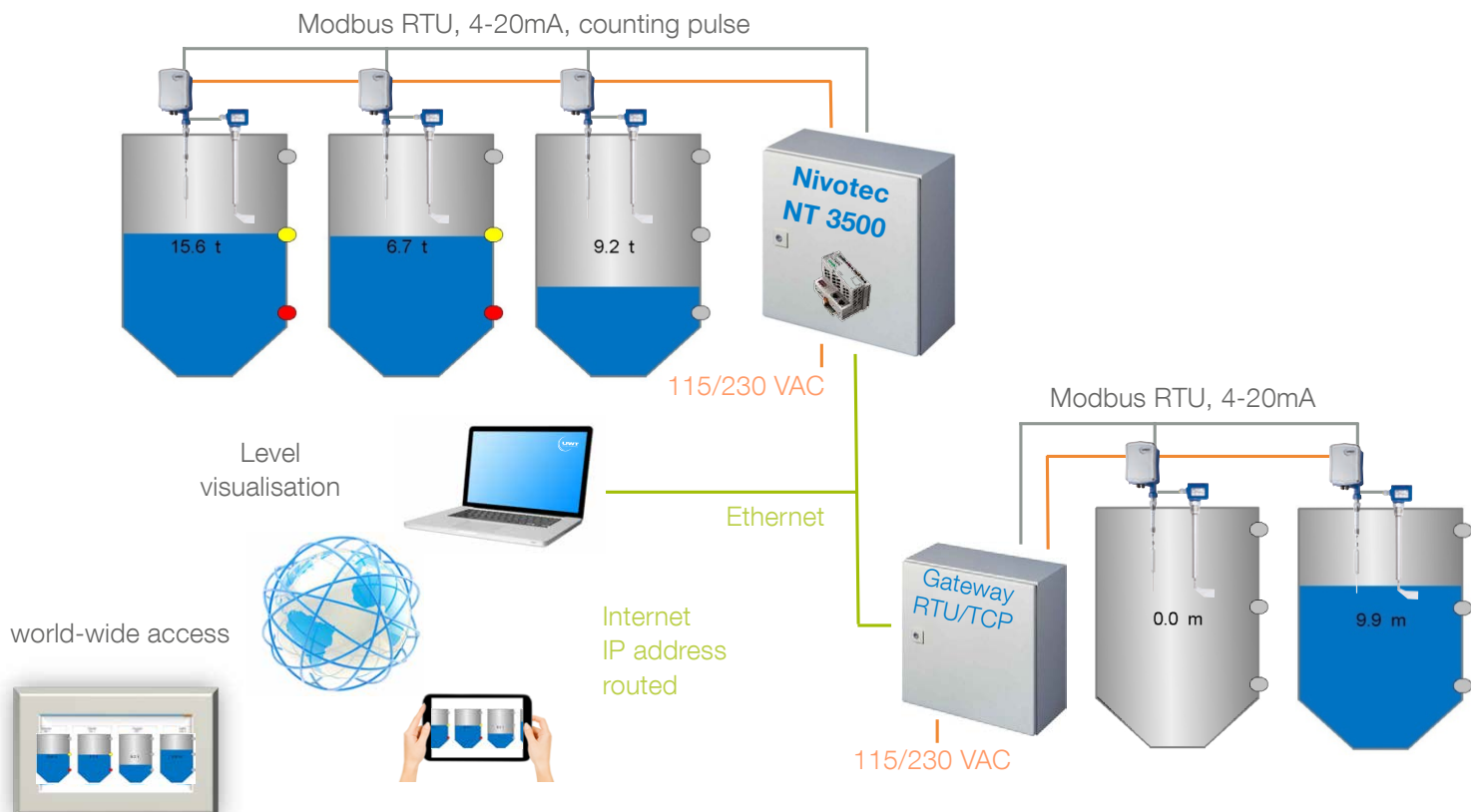
NT 2000 Level indication integrated within a control cabinet

- Indication of level in weight, height, percentage or volume via LED display
- For evaluating the output signal from any level sensors with analog signal 4-20 mA
- Fill control by silo full detectors
- Truck module for tanker trucks to prevent overfilling of silos
- Clear and easy management of the different indicators
- Complete system with project specific electrical plans



NT 3500 Level visualisation from a PC via webserver

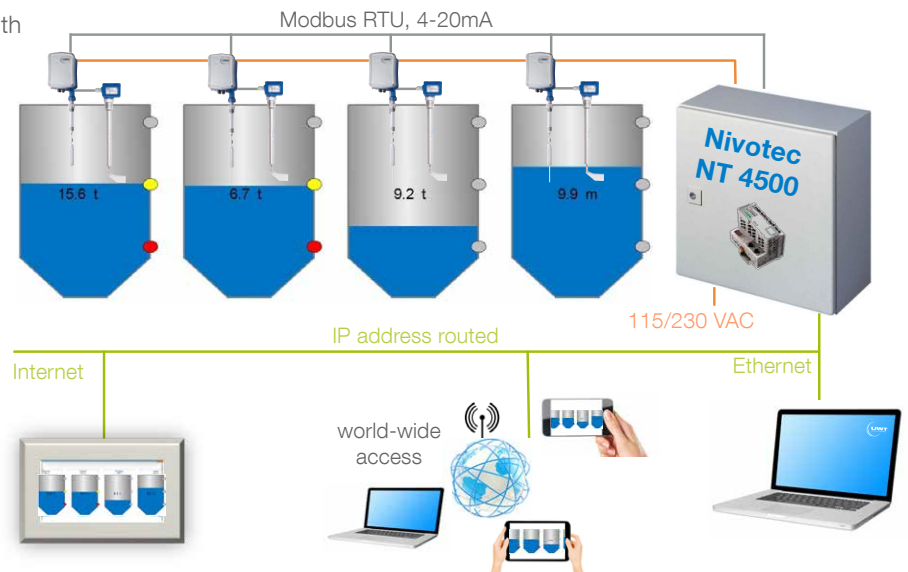
- Level visualisation via webserver
- Password-protected for various use levels with standard browser software on the Ethernet
- For data storage and downloads, trend data and evaluation
- World-wide remote access to the visualisation software
- Fill control by alarm full detection, pinch valve control within filling tubes and recognition of tanker coupling
- For integration of truck operating modules at filling station stage
- Level- and alarm-message via e-mail
- Interfaces for level sensors, 4-20mA, Modbus RTU, Ethernet TCP, counter signal, relay
- Complete system with project specific electrical plans
- Individual project planning



Example of a complete visualisation system for NT 3500

NT 4500 Level visualisation from a PC via webserver

- Standardised, cost effective level visualisation via webserver
- Password-protected for various use levels with standard browser software on the Ethernet
- For data storage and downloads, trend data and evaluation
- Fill control by alarm full detection
- Level- and alarm-message via e-mail
- Interfaces for level sensors, 4-20mA, Modbus RTU
- Complete system with electrical plans



Example of a complete visualisation system for NT 4500

NT 4600 Level visualisation via 7" touch panel

- Visualisation and operation via 7" touch panel
- Data in percentage, height, volume or weight
- Trend display, data storage
- Evaluation of the analogue 4-20mA signals of any sensors, as well as Modbus RTU of the UWT-systems
- Fully wired whether mounted or within control cabinet



NT 4700 Level indicator with digital display

- Digital display hardwired into the terminal box
- Evaluation of level signal 4-20mA of any sensors
- Level indication via 4-digit LED display in weight, height, percentage or volume
- Version for suitable for Nivobob® with "Start measurement" button and LED for "sensing weight in the upper end position"



NT 4900 Level indicator with digital display

- Built-in digital display module
- Level indication in weight, height, percentage or volume
- Yellow LED-Display, 4-digit, 7 segment
- Easy to use button operation on face of unit
- Interface 4-20mA



Service & Support

High-class service for high-tech products

The competent UWT sales and service team helps our clients in consulting and engineering, with professional installation, precise parameterization and a universal service support. Our products are designed individually according to the needs of our customers. Particular service package features can be selected as well as a fixed price, universal service support arrangement.

However, with any service support provided by UWT, our specialists are not satisfied before our customers are.



Project

- Our experts offer individual advice for tailored measurement technology for your system
- We will support you throughout the whole project and are always there for you, to support you with technical questions
- At UWT you get complete packages from a single source – simply, professionally and efficiently



Installation and Set-up

- Our experienced specialists will install all matched components professionally and give you a smooth start
- For the wiring, it goes without saying we only use high-quality materials, e.g. outdoor cables are UV protected
- At the commissioning stage, UWT service technicians leave nothing to chance and thus prevent any incorrect set up from the start



Operator training

- Operator instructions and user training ensure effective implementation and a trouble-free operating
- After commissioning we will continue to support your plant

Tailor-made Solutions

Experienced Solutions Partner

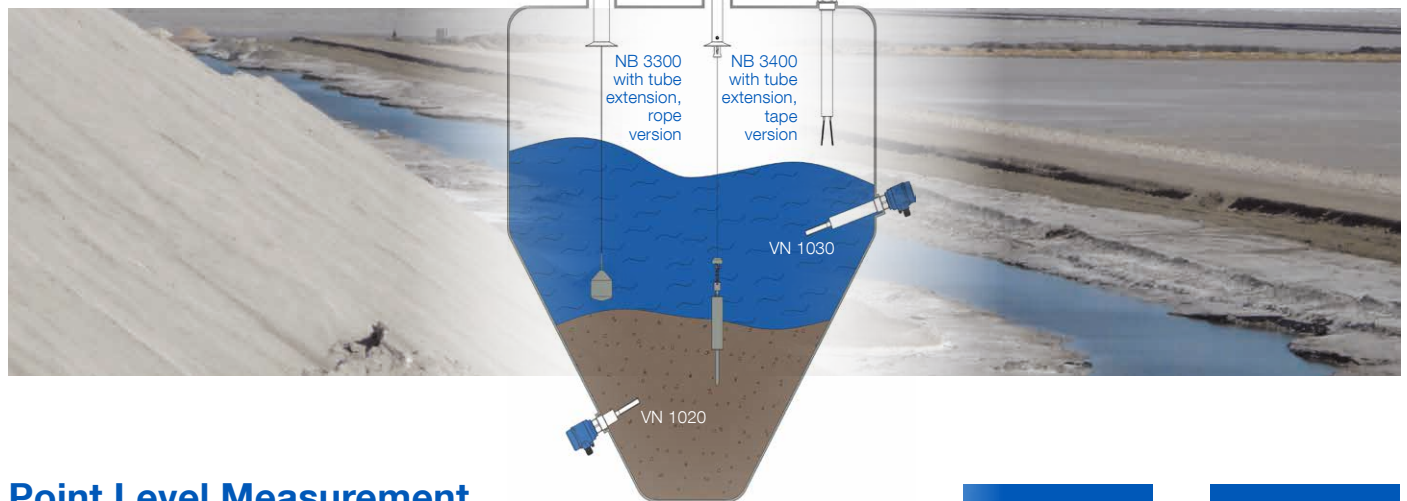
We have the know-how to find the perfect solution for you, even under difficult application or extreme process conditions or when high specifications regarding international certifications are required.

Interface measurement of sediments in liquids

Continuous Measurement

Principles of function: Nivobob®

The electromechanical lot sensors Nivobob® NB 3300/3400 detect the level of sludges and solids in liquids, e.g. stones, sand, salt, slag, etc. - precisely, even within aggressive liquids. There are several industries where the level detection of sludge or solids within liquids is required. For example within sediment tanks/containers, filters or lamella separators within the metal industry, chemical plants, in limestone or gravel plants and within the wastewater industry. Applications range from sludge level measurement within lime and gravel plants to interface measurement in salt water as well as applications on dredging boats.



NB 3300



NB 3400



Point Level Measurement

Principles of function: Vibranivo®

The vibrating fork Vibranivo® VN 1000/5000 series are used for level limit measurement of sludges and solids in liquids. All wetted components are made of stainless steel. Via the electronics setting the sensitivity of the control can be adjusted according to the interface layer.



VN 1000



VN 5000



Global Partner for ingeniously simple and reliable level measurement



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