

Ingeniously simple and reliable  
level measurement



## Solutions for Industry Plants



## Simply reliable level measurement technology

For many years, UWT GmbH has been one of the leading manufacturers of „simply reliable level measurement technology in material processing plants“.

Core competencies are the development, production and sale of devices for measuring and monitoring levels. The product portfolio offers rotary paddle switches, vibration probes, capacitive sensors, plumbing systems, radar measurement and visualization systems. Under the UWT claim „Solutions“, the team of Allgäu experts designs tailor-made complete solutions for customers with great enthusiasm.

- Founding of UWT GmbH in 1977
- Offices in the US, UK, China, India, Russia, Brazil and Mexico
- Distribution worldwide in over 70 countries
- International approvals
- Over 1,000,000 successfully solved applications

We are your partner for individual plant construction. Modern and reliable components in level measurement for the production and processing of bulk goods and liquids are our specialty.

## Achieving more together

We attach great importance to a long-term positive partnership with our customers. Together we develop specific solutions for level and point level measurement in all processes of your plants.



UWT managing director trio



**Your partner for reliable measurement technology  
for your success and that of your customers**





## What Can You Expect From UWT?



### Do you need individually tailored solutions for your industry?

UWT gives particular attention to every single step in the process in order to develop customised level measurement:

- suitable for bulk solid and liquid application in question
- according to your individual specifications
- with the experience of more than 1,000,000 successful applications by qualified professionals with many years of industry knowledge



### Do you need to react flexibly to customer requirements?

KIT solutions enable swift, individually customised device design and efficient stock-keeping.

We offer maximum flexibility:

- in the configuration of the devices due to their modular design
- with application-oriented product design
- short delivery times and quick service



### You operate around the world and have to meet a variety of international standards and certificates?

All UWT products feature an extensive range of national and international certificates and meet:

- country-specific standards
- industry specific certification requirements
- global hazardous area approvals
- global safety regulations



### Do you value your brand presence in the market?

We will support your corporate branding and design your sensor according to your specifications and individual needs:

**Your corporate branding =**

**PRIVATE LABEL + COLOUR + HOUSING + PACKAGING**

This will ensure you maintain long-term customer loyalty, not least for replacement parts but also for future business.



### You expect superior quality?

Continuous improvement processes ensure our products are of the highest quality:

- 100% success rate in every functional test + HV-PE Test + endurance test before delivery
- guaranteed – faultless performance of 99.8%!
- “Made in Germany” guaranteed quality
- extended 6 year warranty!



The significance of the **gear mechanism** is not to be underestimated.

### **Small wheel - big effect**

Many a “simple” type of component can soon become a problem if it’s not working reliably.

In situations where level monitoring is required, costly events such as over filling of the silo can be avoided.

We design sensors to have a high degree of compatibility for your processes, so that they can be seamlessly integrated into your installations ensuring that you always receive the optimal solution.

### **You have a varying range of price segments?**

UWT offers a diverse portfolio including:

- cost-effective standard designs
- premium versions with high-end specifications

Our knowledgeable staff will advise you according to your individual needs and provide you with an obligation-free quote.



### **Are you looking for innovation?**

Our engineers are passionately dedicated to working on new concepts and with the latest, high-quality technologies to improve and increase the efficiency of our systems. Focus is always on the development of innovative products that deliver:

- simplicity
- longevity
- process safety



## At home in the Allgäu and around the world

Our sales team can help you with any questions regarding our products.  
Let our friendly and knowledgeable staff give you solution-oriented advice.



### Our all-round service includes:

- Individual support and personal advice on the appropriate measuring technology for you
- Finding the best possible solution - quickly, simply, flexibly and economically
- Tailor-made quotations for customer-specific requirements
- Full explanation of our product range and the most effective combinations
- Technical information on the entire product portfolio for all applications
- Product training and workshops tailor-made to your application(s)

Renowned companies both at home and around the world have for years relied on our products and services in the area of level measurement.

### International presence:

Effective global project management will ensure your success. We will have a knowledgeable point of contact local to you and your customer who can quickly and effectively identify and manage your needs. All technical documentation can be obtained in many other languages as well as English. Because of the personal network of contacts around the world, this allows UWT to respond swiftly to market forces and the needs of every customer.



## Superior quality for global diversity

UWT offers top quality “made in Germany” technology for the diversity of global markets. The devices meet the technical standards in accordance with international standards. Responsible adherence to country-specific conditions is an inherent part of UWT’s sales policy.

## Worldwide - everything from a single source

Due to the international orientation of our company and the consistent expansion of new sales structures, we offer our customers worldwide a market-oriented presence of specialists for level measurement technology from UWT. With our branches in **Brazil, Mexico, China, USA, UK, Russia and India** as well as a network of exclusive sales partners in **more than 70 countries**, customer requests can be met with the greatest flexibility worldwide. Through our interculturally experienced and competent sales staff, we guarantee worldwide customer proximity and individual service support.

## Internationally certified measurement technology



## UWT Portfolio

UWT provides sensors for the measurement of level and limit level in bulk solids and liquids. Depending on the medium and the application, different measurement techniques are used. In addition, we offer a range of complete systems for level monitoring and visualisation. The product lines include not only an economic standard but also particularly high grade, premium versions which can meet customers' various needs.

UWT devices are completely maintenance-free and importantly, carry international certificates. These certificates are adapted in view of the constantly expanding international markets. All limit switches are available with universal voltage electronics as standard or as an option.

**6** YEARS  
GUARANTEE  
**APPROVED  
QUALITY**

## Approvals world-wide



## Quality Certificates



### Level limit switch

#### Rotary Paddle Level Switch

- Variable extension lengths – either rope or tube
- Extension and process connection available in stainless steel
- Adjustable sensitivity
- EHEDG compliant
- Suitable for use in high temperatures of up to 1,100 °C
- Modular design
- Rotonivo® 6000 SIL 2 compliant
- All-rounder for all applications
- Wide variety of configuration options

#### Rotary Paddle Level Switch

- Variable extension lengths – either with pendulum shaft or rope extension
- Version with plastic housing and process connection
- Various process connections
- Adjustable sensitivity
- Modular design
- Plastic design offers increased corrosion resistance

#### Rotonivo® Series 3000/6000



#### Rotonivo® Series 4000





## Vibrating Fork Level Switch

- Variable extension lengths – either rope or cable extension
- Extension and process connection available in stainless steel
- Sensitive to the lightest bulk materials (< 5 g/l)
- EHEDG compliant
- Version with separate housing available
- NAMUR-electronics
- Suitable for interface measurement within sediment tanks/containers

## Vibrating Fork Level Switch

- Variable extension lengths – either rope or cable extension
- Extension and process connection available in stainless steel
- "Extension, process connection and oscillators cast from one mould"
- Sensitivity from 30 g/l

## Vibrating Single Rod Level Switch

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

## Capacitive Level Switch

- Variable extension lengths – either rope or cable extension
- Extension and process connection available in stainless steel (Stainless steel probe material with FDA conformity)
- Version with plastic coated extension available
- Can be used in low dielectric values from 1.5 DK
- EHEDG compliant
- Suitable for use in high temperatures of up to 500 °C
- Suitable for use in process pressures of up to 25 bar
- "Active Shield Technology" for anti-caking functionality
- Available as remote version
- User friendly parameter setting via display and function buttons with measurement results given also via display
- Simple automatic calibration at start up

## Vibranivo® Series 1/2/5/6



## Vibranivo® Series 4000



## Mononivo® Series 4000



## RFnivo® Series 3000



## Capacitive Level Switch

- Level limit detection in liquids, slurries, foam, interfaces and solids
- "Potted electronics, "Active Shield Technology" against material build-up ensures high functional safety"
- Robust design, PFA isolation for high chemical resistance
- Digital electronics with integrated display and operating menu, programmable
- Extended rod version or rope version
- Suitable for use in high temperatures of up to 400 °C
- Suitable for use in high pressures of up to 35 bar
- Sensitivity: dielectric constant  $\geq 1.5$

## Capacitive Level Switch

- Variable extension lengths – either rope or cable extension
- Versions available with plastic housing, process connection and extensions
- Extension FDA compliant
- Can be used in low dielectric values from 1.6 DK
- Suitable for use in high temperatures of up to 180 °C
- "Active Shield Technology" for anti-caking functionality
- Integrated earthing in process connection
- No calibration required

## Capacitive Level Switch

- Flexible use, compact design
- Stainless steel and plastic version
- With threads from 1/2"
- No maintenance
- Corrosion resistant construction
- Level limit detection in liquids, slurries, foam, interfaces and solids

## Capacitive Level Switch

- Extended pipe version or cable version
- Flexible use, range of process connections, hygiene versions, digital version with LCD
- Potted electronics, "Tip Sensitivity" against material build-up ensures high functional safety"
- High safety standard
- Sensitivity: dielectric constant  $\geq 1.5$
- Level detection independent of tank wall/ pipe
- High chemical resistance on probes
- No maintenance

## RFnivo® Series 8000



## Capanivo® Series 4000



## Capanivo® Series 7000



## Capanivo® Series 8000



## Level Transmitter

### Electro-mechanical Plumb Bob Sensors

- Measuring range up to 50 m (silo height)
- Easy commissioning
- Rope and tape version
- Integrated tape cleaner
- Threaded or flanged process connection
- Modbus and Profibus interface
- Reliable measurement results independent of material
- Suitable for interface measurement within sediment tanks/containers

### Electro-mechanical Plumb Bob Sensors

- Measuring range up to 30 m (Silo height)
- Easy commissioning
- Rope and tape version
- Integrated tape cleaner
- Threaded or flanged process connection
- Aiming flange for angled installations

### Guided Wave Radar Sensor TDR

- High sensitivity: dielectric constant  $\geq 1.5$
- Heavy mechanical loading
- Aluminum housing or stainless steel housing, protection level up to IP68
- High quality process connection material SS316L, PA coated, insulation FKM/FFKM/EPDM
- Electronic 2-wire, 9.6..35V DC, 4 - 20 mA, HART
- Rod or rope version
- Robust version suitable for overpressure up to 40 bar
- Temperature solution up to +200 °C
- Threads from  $\frac{3}{4}$ ", G/NPT

### Guided Wave Radar TDR

- Digital electronics with integrated display and operating menu, programmable
- High sensitivity: dielectric constant  $\geq 1.4$
- Aluminum housing or stainless steel housing, protection level up to IP68
- High quality process connection material SS 316L, PA coated, insulation FKM/FFKM/EPDM
- Accurate measurement, threads from  $\frac{3}{4}$ "
- Rod 6 m, rope 75 m or coax version 6 m
- Robust version suitable for overpressure up to 400 bar
- Ultra-low and high temperature applications, temperature range -196 °C to +450 °C
- Electronic 2-wire, 9.6..35V DC, 4 - 20 mA, HART
- SIL2 certificate

### NivoBob® Series 3000



### NivoBob® Series 4000



### NivoGuide® Series 3000



### NivoGuide® Series 8000



## Radar Sensor

- Measuring range up to 100 m (Silo height)
- Simple, six-step commissioning
- Aiming flange model
- 4° beam angle
- Temperature solution up to +200 °C
- 78 GHz technology
- Lens antenna and mounting flange are flush

## Radar Sensor

- Use in narrow, medium-sized silos up to 30 m
- Very compact with 1" process connection (PVDF)
- Various mounting accessories
- Measurement to antenna tip (no blocking distance)
- Very high sensitivity (DK value  $\geq 1.1$ )
- 80 GHz technology
- 4° narrow beam lobe
- Potted PVDF housing
- Degree of protection IP66/ IP68
- Temperature solutions -40 °C to +80 °C
- WHG certification

- Use in process and storage tanks up to 15 m
- Flush antenna
- Very compact with 1 1/2" process connection (PVDF)
- Various mounting accessories
- Measurement to antenna tip (no blocking distance)
- Very high sensitivity (DK value  $\geq 1.1$ )
- 80 GHz technology
- 8° narrow beam lobe
- Potted electronics
- Degree of protection IP66/ IP67
- Temperature solutions -40 °C to +80 °C
- WHG certification

## Capacitance Level Transmitter

- Variable extension lengths – either rope or rod extension
- Continuous level measurement in liquids, slurries and solids
- Performs viscous materials (conductive or nonconductive), even in challenging environments involving vapour and dust
- PFA isolation for high chemical resistance
- Suitable for use in high temperatures of up to 200 °C
- Suitable for use in high pressures of up to 35 bar
- "Active Shield Technology" against material build-up ensures high functional safety
- No maintenance
- Robust version

## NivoRadar® Series 3000



## NivoRadar® Series 4000



## NivoRadar® Series 7000



## NivoCapa® Series 8000





- Web-based visualisation solution
- Level monitoring and analysis via ethernet
- Remote access via internet option
- Complete system for plug and play
- Sensor interface for 4-20mA or Modbus RTU
- Expandable to monitor up to 15 or 30 silos within a plant
- Full, empty, demand, fault alarm via email option
- Signal output for silo full alarm
- Effective silo management



Complete system for:

- Level indication
- Trend display
- Data storage
- Remote fill level analysis

## Project Planning

- Individual consultation for appropriate measurement
- Project support for technical queries
- Project planning for customer specific solutions



## Service

- Sensor configuration by experienced application technicians
- Swift, professional installation and commissioning
- Full documentation of settings for future reference
- Full training for operating personnel



## Your partner for storage and handling processes

Bulk materials and liquids are indispensable in our lives. It starts with breakfast with coffee, tea or cocoa and the associated sugar or sweetener and continues with a large number of industrial manufacturing processes. Thousands of years ago, people were already producing bulk goods and liquid mixtures by grinding and crushing plants and grain with stones to make flour or pastes, for example. Thus, at that time, classic processes were already born. the grinding. The shredding. The mixing. The storage.

Today there are many processes in different industries, all of which have meanwhile become specialized. With reliable sensor technology, UWT makes a decisive contribution to making these processes safe and optimal. The fill level measurement and overfill protection during storage, the requirement indicator when filling materials, the flexibly adjustable limit switch for volume dosing or the mechanically heavy-duty sensor in mixer tanks. Every process has a special requirement for the sensor.

With over 40 years of experience in industrial applications in a wide variety of sectors, UWT GmbH has created many solutions for customers worldwide. The focus was always placed on functional reliability and the highest quality of the sensors as well as a flexible alignment to customer requirements.

## Customised solutions for the processes of all industries



### Storage Processes

Requirements met by UWT include:

- ✓ Large measuring distances in high silos
- ✓ High accuracy despite large diameter of container
- ✓ Measurement during silo filling
- ✓ Rapid response to overfill protection
- ✓ Measurement within extremely dusty environments during filling
- ✓ Measurement of fluidised products - excellent sensitivity
- ✓ Complete systems for level monitoring with visualisation
- ✓ Level measurement of material within steep gradient cones
- ✓ Applications within very high polluted environments
- ✓ Effective silo management with Nivotec®
- ✓ Limited space in multiple chamber silos

We offer the right **measurement technology** for every **process** within your **plant**



### Conveying Processes

Requirements met by UWT include:

- ✓ Backlog detector required in applications with limited space such as pipes and manholes
- ✓ Where fast response to overflow is required for small transfer containers
- ✓ Limit switch within pressure feed containers
- ✓ Adjustable sensitivity for material flow detection
- ✓ Where abrasive solids or liquids are in contact with the sensor



## Dosing / Mixing Processes

Requirements met by UWT include:

- ✓ Where high sensor sensitivity for precise volume dosing is required
- ✓ Where reliable detection of varying bulk goods and liquids is required
- ✓ Where flexible switching points in the dosing process is required
- ✓ Applications where the material is continuously moving within an agitator
- ✓ Where high temperatures, condensation, dust and caking are characteristics of the application
- ✓ Where high resistance to aggressive bulk goods and liquids is required



We vouch for  
every product  
that is  
**customised**  
for your plant design



## Your partner within the dosing, mixing, filling and drying processes

From the very beginning, UWT's business plan has been straightforward and strong – to offer totally reliable products at a fair and competitive price that can be safely integrated into any system. This in turn ensures that life is as easy as possible for you and your customers.

Therefore, we deliver reliable level measurement components and level detection systems, which, whether 'off the shelf' or tailor-made, are key to your process. As a system provider, we never lose sight of the big picture. After all, you as the plant manufacturer have everything to gain only if the entire system works smoothly.

We will support you during each phase of the bulk material and liquids handling project - no matter whether it is a single container, dosing or mixing plant, conveyor systems or an entire complex of silo systems.

### Filling Processes

Requirements met by UWT include:

- ✓ Vibration within the process system
- ✓ Where different media must be reliably detected
- ✓ Where there is little space within the process for the sensor



**UWT is the best resource  
partner for individually  
tailored solutions**

### Drying Processes

Requirements met by UWT include:

- ✓ Able to withstand high temperature
- ✓ Detection of varying media
- ✓ Functional reliability within condensation and caking



## Your partner for other challenging processes

Level measurement technology is multifaceted and rarely stands still. Exciting and challenging developments in applications mean that the UWT product range continuously grows and develops to meet these requirements.

The design experts at UWT work meticulously on level measurement technology, specialising in specific customer solutions.

Plant operators are keeping pace with the wide range of challenges presented by raw materials, the changing operating conditions in silos or pipelines and the need for ex-certificates, to name just a few. Such requirements call for measurement solutions that are versatile, whilst representing cost-effective investment and offering basic versions fully equipped to meet a wide variety of these requirements.

All these factors are familiar to UWT. The product portfolio is therefore fully flexible to meet the needs according to demands. Uncompromising ruggedness, universal functional reliability, easy installation and operation as well as absolute freedom from costly maintenance are essential basics of the technology.

We design **solutions** with  
**added value** for your  
**processes**

### Grinding / Shredding Processes

Requirements met by UWT include:

- ✓ Where dust, moisture and noise affect the sensors.
- ✓ Varying bulk densities in recycling processes
- ✓ Multiple cycles in rapid processes
- ✓ Hygienic applications

### Filter / Separation Processes

Requirements met by UWT include:

- ✓ Sensors that are able to withstand corrosive media
- ✓ Sensors that can deliver reliable results in spite of caking
- ✓ High temperatures in the applications
- ✓ Sufficient sensitivity must be ensured
- ✓ Sediment detection within interface measurements





## Injection / Moulding / Extruding Processes

Requirements met by UWT include:

- ✓ Where there is limited space within feed screws to material transfer point
- ✓ Where durable sensors are required for high volume of switching cycles
- ✓ High process temperatures



## Foam / Expansion Processes

Requirements met by UWT include:

- ✓ High sensitivity for very low bulk densities
- ✓ Safe and reliable functionality within statically charged environments
- ✓ Rapid sensor response time within small containers
- ✓ High temperatures

**UWT will accompany you from basic project planning engineering through to professional installation**



## Innovative solutions



### The world's first rotating paddle switch in accordance with functional safety SIL2

The terms functional safety and safety integrity level (SIL) became increasingly important following the publication of the international standards in accordance with IEC 61508 / IEC61511.

This was particularly relevant in systems with hazard-causing processes such as are found within chemical plants. Functional safety has become mandatory. To attain this standard, safety-related practices, design principles and error considerations must be addressed in order to completely minimise the risk of a dangerous failure. The engineers at UWT have intensified work and research on this subject with the development of the newly designed Rotonivo® RN 6 Series paddle switch according to the normative requirements. This device has been designed with full functional safety and safety functions in order to reduce risk, according to the SIL2 guarantee. Typical safety functions are overfill and dry run protection.



### More security for chemical and power plants



The re-designed electronics of the RN 6 was one of the aspects of functional safety. This has been designed so that electrical component failure in a perform reliant switching state of the output signal and thus a hazard is avoided by the system. With the innovative SIL2 compliant Rotonivo® RN 6 operators now have the opportunity to install within their safety-related systems, a sensor system in accordance with their specified safety integrity level and which is the perfect metrological component of their safety circuit.

### Ingenious interface measurement





## The limit switch for extreme environments

The RFnivo® proves itself in applications as an all-round talented level switch. The extremely robust boom of the RF 3200 and RF 3300 withstand high mechanical loads while offering all the advantages of capacitive point level measurement. They are insensitive to caking, function in process temperatures of up to 500°C and process pressures up to 25bar. The RF 3100 shaft is coated with its PTFE and so can be used in aggressive applications in electrostatic precipitators. The centerpiece is the electronics system. The system makes it very easy for the operator in that the devices are automatically calibrated during commissioning. The Quick Start parameters are driven to a display menu to set signal output and the sensitivity. Furthermore, all measurement results are displayed.

The RFnivo® is suited to measurement of cement and plaster mixtures in the construction industry, for fly ash in power plants to plastic granules in the plastics processors. The RFnivo® has the DustEx approvals for Zone 20 and 20/21, as well as the Zone 1 in GasEx Area.



**RFnivo® probe with full coating**



**An all-rounder for  
all sectors with total  
user-friendliness**

The multi-functional technologies found in the Nivobob® NB 3300 (cable version) and NB 3400 (tape version) plumb line system products have been specially modified for interface measurement.

They are ideal partners for use as continuous measurement of salt or sludge levels in within contaminated water containers or asbestos silos. The resistance to corrosive materials by the devices is of vital importance in order to achieve reliable results.

All process-contacting sensor parts are therefore also coated or made of corrosion-resistant materials. The stainless steel wire rope version can be offered with a protective PA plastic covering and is highly resistant to aggressive media in waste water which can be found in settling ponds.

The calibration of the sensor is straightforward and the weight adjustment can be implemented mechanically. This measurement principle for interface measurement is sensitive, simple and at an unbeatable price.



**Interface measurement in  
slurry tank with precise  
lot measurement systems**

## Partnering for success

UWT is the leading manufacturer of measurement technology in the world market. With years of experience, a reference list that contains countless well-known companies from a wide range of industries, innovative technology and a worldwide network we can ensure your success.

We can offer you an experienced project manager with cross-industry knowledge to ensure fast and application-oriented project implementation.

When configuring the sensors we are guided completely according to your respective requirements, whether through consideration of specific environmental and working conditions, hygiene requirements, sensitivity or safety regulations.

UWT provides efficient and service-friendly level measurement technology for applications in many industry sectors. Devices can be customised for individual measurement techniques. Within bulk solids and liquids applications designed and particular measuring objectives can be achieved with individual designs.

UWT sensors have been and are in action within a huge variety of applications in different industries under typical and exceptional operating conditions.

Reliably working, for many years!



At home and abroad, for  
many years **valued**  
plant management  
companies have  
placed their **trust**  
in our products, our  
**knowledge**  
and our **service**







**UWT** - Your global partner for the future



**UWT GmbH - Level Control**

Westendstr. 5  
87488 Betzigau  
Germany

Tel.: +49 (0) 831 57 123 0  
Fax: +49 (0) 831 57 123 10

[www.uwtgroup.com](http://www.uwtgroup.com)  
[info@uwtgroup.com](mailto:info@uwtgroup.com)