



On-line turbidity and solid matter measurement

using new revolutionary technology

Continuous turbidity and solid matter measurement are of great importance in analytic measurement in modern wastewater treatment plants. Optical infrared scattered light sensors are commonly used for online measurement of this parameter on-site, particularly in the areas of biological wastewater treatment and sludge recycling and in the final effluent of treatment plants.

NEW

Features

- **Totally new ultrasound cleaning system**
- Measurement according to EN ISO 7027
- Special optics with precise measurement beam generation
- Scratch-proof sapphire measurement window
- High operational safety due to SensorCheck function
- Long-term stability
- Highly accurate calibration at the factory
- Compact design
- Robust construction
- No wear-and-tear parts
- Extremely low maintenance



A clean sensor – prerequisite for reliable measurements

In optical systems contaminants simulate an incorrect turbidity and solids content of unknown size. Once contamination of the optical system has begun, further build-up of particles progresses at an accelerated rate. Especially under the extreme conditions that prevail in wastewater treatment plants, the accumulation of microorganisms represents a genuine problem for the otherwise reliable optical measurement method. Therefore, additional manual cleaning is usually indispensable – despite conventional methods of compensation or cleaning using available wiper systems.

VisoTurb and ViSolid – new sensors for turbidity and solid matter measurement

With the **VisoTurb 700 IQ** and **ViSolid 700 IQ** sensors, WTW introduces a new family of optical sensors for turbidity and solid matter measurement. These sensors incorporate a completely new and innovative ultrasound cleaning system that guarantees low maintenance and long-term reliability of the sensors. Turbidity measurements in aqueous media with VisoTurb are carried out nephelometrically in compliance with EN ISO 7027. Solid matter measurement with ViSolid is performed according to the principle of scattered light measurement.

Because of the enormously wide measuring ranges of VisoTurb (0 – 4000 FNU) and ViSolid (0 – 300 g/l SiO₂), the best resolution for each measured value can be selected using an AutoRange function. Thus, only two sensors are required to cover almost all applications ranging from drinking water to highly concentrated sludge.

Integrated, wear-free automatic cleaning system

The ultrasound source integrated in the sensor generates high-frequency vibrations of the optical windows in the micrometer range. The maximum vibration amplitudes are at the center of the measurement windows, so that the largest displacement can be found at this location. This prevents accumulation of any kind of contamination from the very start, and thus provides for reliable measurements for continuous operation.

Stubborn calcium deposits are also combated in the initial stages. Once they have accumulated they can no longer be removed with a brush and cleaning agent alone, but require the use of acid. The accumulation of air bubbles in the area of the measurement windows is hindered by the ultrasound vibrations in order to prevent measurement falsification due to light scattered by the air bubbles.



Sensor without and with ultrasound cleaning system

Extremely low maintenance

- In contrast to traditional sensors equipped with wipers and jutting corners, the exceptionally smooth sensor surface provides a minimum of surfaces on which deposits may accumulate.
- The continuously active ultrasound system inhibits the deposit of all kinds of contamination from the start. It also prevents interference by air bubbles in the area in front of the measurement windows.
- Thus, the sensor can be operated in a wide variety of applications over several weeks without maintenance.

Thanks to their robust design and the efficient ultrasound cleaning system, **VisoTurb 700 IQ** and **ViSolid 700 IQ** are particularly suitable for applications with extreme conditions, e.g. wastewater treatment plants. They provide the user with a very high degree of measurement accuracy at an exceptionally low maintenance rate.

Technical data, see page 272