

Introduction Rhosonics

Rhosonics was founded In April 1992 with the goal to provide sustainable measuring instruments to the industry. Rhosonics is based in the Netherlands, in Putten. At the headquarters they design, develop, produce and supply state of the art ultrasonic sensors and analysers for a variety of industries. Through the years, Rhosonics became a leading supplier of non-nuclear density meters in the mineral processing industry.

Rhosonics helps the industry to become more sustainable by using reliable and robust ultrasonic technology for real-time measurements. Real-time process data is the key for a true process control, optimization, and cost effective operation.

Information SDM

Dredging and mining companies are increasingly looking for non-nuclear measuring instruments, because of stricter government regulations, increasing safety related costs and the need to reduce nuclear waste. Rhosonics helps the industry to create a safe and pleasant work environment by offering non-nuclear (ultrasonic) technology for density measurement in slurries.

Rhosonics ultrasonic density meter eliminates all costs, health and safety risks related to the radiation source. The device is easy-to-use, has no need for any license and provides reliable density values to monitor and improve the production output.

With more than 700 installations worldwide and more than ten years of experience with ultrasonic density measurement, Rhosonics believes that most nuclear density meters are no longer needed.

Mining Technology Excellence Award 2020

Rhosonics has won the 'Environmental Impact' category in the Mining Technology Excellence Awards 2020 from GlobalData. The award celebrates Rhosonics' solution for non-nuclear density measurement, the SDM Slurry Density Meter, which is helping hundreds of processing plants around the globe to achieve a greener and smarter operation, as one of the greatest achievements and innovations in the mining industry.

The award is considered as a platform for the people and companies that are driving change. Rhosonics is very proud of winning this award as recognition of their efforts to improve sustainability in the mining industry.

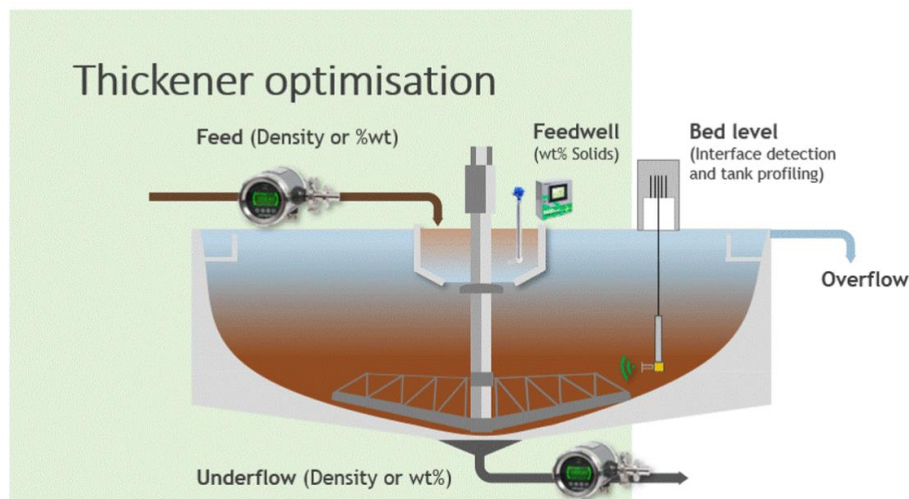


Features and benefits SDM

- Non-Nuclear density meter, ultrasonic technology
- Real-time density measurement
- Durable probe system
- Lowest possible maintenance needs
- High accuracy and reproducibility
- Suitable for all types of slurries
- Compact integrated system
- Process connection via HART and 4-20mA
- Continuous data & system logging
- Benefits compared to the nuclear device:
 - No health and safety risks
 - No radiation safety officer (RSO)
 - No licenses or obligatory training
 - No costs for disposal and transport of the radiation source

Thickeners

The thickening process can be monitored and improved by measuring density in the feed of the system, in the feedwell and in the underflow. Combined with a flow meter, the mass flow can be calculated, giving real-time insights about the efficiency of the thickener operation. Thickeners can be used as a water recovery system, to meet requirements in the recovery and reprocess of water. A growth of 1 or 2% in underflow density can return large amounts of water to the operating installations. The increasing of density is also important to avoid accidents in tailings dams, which can collapse when there is too much liquid pumping to the dams.

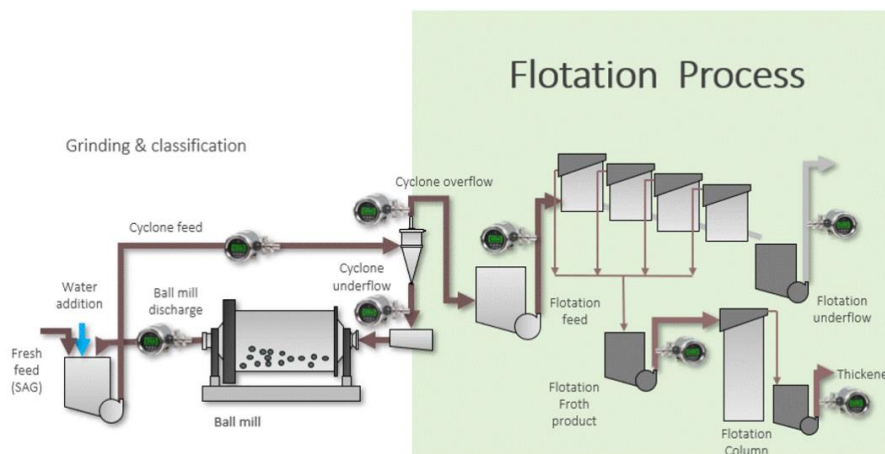


Flotation circuit

Real-time density measurement can help to verify changes in the slurry from the grinding circuit to the flotation cells. The effect of flotation feed density on metallurgical performance has been investigated. Optimal flotation means reducing the amount of gangue that is sent together with valuable minerals to further stages of the process. An enriched product should be produced with the lowest energy costs, containing most valuable materials (the concentrate). If you combine a density meter and a flow meter in the flotation feed and line of the final product of the flotation, this will allow a mass balance calculation and calculation of the efficiency of the circuit.



Scan image to download process scheme (P&ID)



Grinding circuit

There are different points for measuring density in the grinding circuit. One of the applications is to monitor the dilution of material in the ball mill discharge, to improve the efficiency of the process. Another important application is to monitor changes of density in the cyclone underflow, this can be done to check the process stability and increases or decreases of circulating load. Water impacts the grinding process, therefore the efficiency of the ball mill can be greatly improved by better water dosage. This alone could improve the efficiency with 5-15% according to [911 metallurgist](#). When this is combined with a control strategy, the improvement rate could be even higher.

Video and pictures SDM

Please see the video below to learn more about the SDM technology:
<https://www.youtube.com/watch?v=Z2UTQ3geIE0&t=>



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