DENSITY MEASUREMENT FOR DREDGING APPLICATIONS

Highly accurate measuring results under extreme conditions
Efficient dredging is based on the optimum ratio between the density and flow rate of the dredged material. Precise monitoring of current production is crucial for increasing yields. The radiometric density measurement is a well-established method in the dredging industry. This technique not only helps to reduce over-dredging and operational costs, it also helps to lower the damage to the environment by reducing the ecological side-effects.

Mounted on the outer wall of the pipeline, Berthold’s density measurement system provides superior and stable readings despite harsh environmental conditions. In combination with a flow rate signal, the radiometric density measurement delivers highly reliable information about current production.

Berthold’s density measurement solution for dredging applications are used for continuous process control on pipelines. During measurement, the flow properties of your system are not affected due to the non-contacting method. This results in a wear and maintenance-free system.

**Advantages**

- Outstanding sensitivity
- Highly accurate and repeatable
- Proven industrial measurement technology
- Real-time measurement during running operation
- High measurement stability through patented sensitivity control
- No wear as measurement is contactless
- Easy installation without pipeline modification

**Features**

- The optional use of the SuperSENS detector facilitates maintaining low source activities the use of a smaller shield keeping the dose rate on the detector side low.
- Both a compact detector systems with HART and a detached system with a separate transmitter are available.

Efficient dredging

To obtain information about the current production the density measurement needs to be combined with a separate flow rate meter. Both measuring signals (flow rate and density) are displayed by a cross-needle indicator. The cross-point of the two needles shows the current yield.

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**LB 474 Density Measurement System**

Berthold’s measurement system LB 474 is used for online monitoring of the density. With a second device LB 474 and a separate flow rate meter it is even possible to measure both, the density as well as the mass flow (total mass flow or mass flow of the solids). Extreme measuring conditions like vibration, weather or varying particle size and composition don’t effect the measuring performance. Due to the sophisticated stabilization of the detector performance, the highly accurate measuring results are guaranteed for many years of operation and no maintenance is required at any time.

Since, the gamma radiation source (Co-60 or Cs-137) is sealed safely in a compact shield made from lead, tungsten or stainless steel, highest operational safety is given. As an option the shield can be equipped with a pneumatic shutter mechanism, which automatically closes the radiation path when the dredge breaks down or the pipeline runs empty.

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**Typical arrangement of a radiometric system for contactless, non-intrusive density measurements**

The cross point value gives the net dredging result.
THE EXPERTS
IN MEASUREMENT TECHNOLOGY

Berthold Technologies stands for excellent know-how, high quality and reliability. The customer is always the focus of our solution. We know our business!
Using our varied product portfolio, our enormous specialized knowledge and extensive experience, we develop suitable solutions together with our customers for new, individual measurement tasks in a wide variety of industries and applications. Berthold Technologies is specialised in radiometric process measurements for 70 years. This is our core competence with state-of-the-art and cutting edge products and solutions covering a vast range of industries and applications.

We are here for you – worldwide!
The engineers and service technicians from Berthold Technologies are wherever you need them. Our global network assures you fast and above all competent and skilled assistance in case of need. No matter where you are, our highly qualified experts and specialists are ready and waiting and will be with you in no time at all with the ideal solution for even the most difficult measurement task.