Online Moisture Measurement for Wood Chips

Instruments for an ideal cooking process

The problem is to measure the moisture of wood chips, a necessary prerequisite for process optimization in the cooking process. An online measurement at the conveyor belt provides an immediate moisture indication ensuring an optimum addition of white liquor to the digester. Customers benefit from improvements in pulp yield and quality as well as reduction of kappa number variations.

Unlike conventional measuring techniques, the moisture analyzers from Berthold Technologies measure the total volume of material on the conveyor belt. Thus the moisture reading is very representative. Since all moisture values are available in real-time the moisture systems from Berthold are clearly of benefit to the cooking process.

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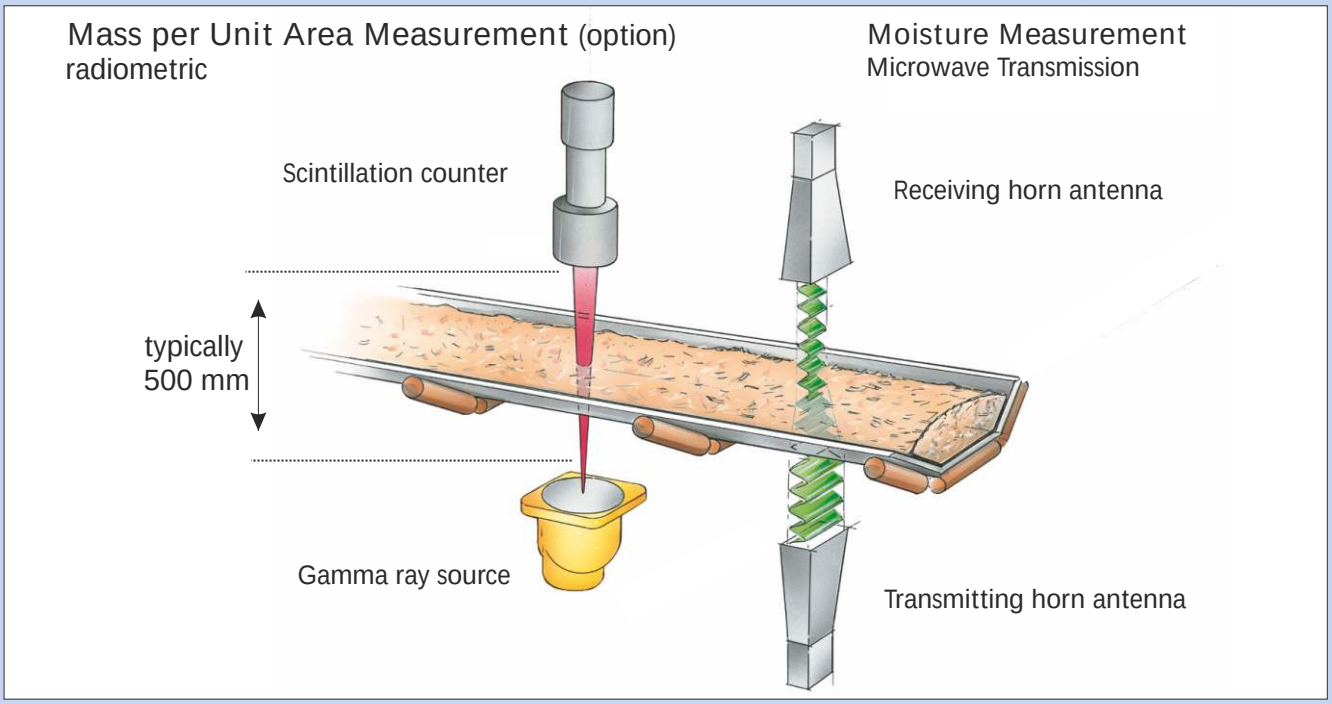
Characteristics of the Berthold Moisture Analyzers

The Berthold Microwave Analyzer provides an online and real-time moisture measurement of the wood chips. It generates multiple microwaves in a wide frequency range, emitted by an antenna below the conveyor. The microwaves penetrate the wood chips and are received by a second antenna above the belt. When penetrating the wood chips, the microwaves characteristics change in terms of attenuation and phase shift. Those changes directly correlate to the wood chip moisture.

Variations in layer thickness and bulk density can be compensated with an optional measurement of the mass per unit area using an additional radiometric system. Thus providing a stable and reliable moisture signal.

Gauges are installed at the feeding line to the digester and the evaluation unit is mounted close to the gauges. Depending on the sampling representativity and measurement conditions a typical accuracy of better than ±1.0 % (1 sigma) can be achieved.



Features and Benefits

Absolutely representative
since the whole layer thickness is measured.

Non-intruding sensors
no wear of probes, no maintenance required.

Accurate and long-term stable
no need for frequent recalibration.

Real-time information
ensures early recognition of trends and immediate interventions.

Microwave Principle
unaffected by colour & bulk surface. Easy to install & no moving parts.

Mass per unit area measurement
ideal for compensation of layer thickness & bulk density variations.

Wide frequency range
ensures a precise and reliable measurement

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