

## Real time measurement of moisture in woodchips and pellets

When it comes to using woodchips and wood pellets as a fuel on a commercial basis, the moisture content must be taken into consideration. In some cases woodchips, dependant on their source and time of production, can have a moisture content of up to 60% by weight.

This moisture content of the woodchips needs to be verified by both customer and supplier alike to ensure that the required specifications of the woodchips are met. Woodchips with high moisture content effectively means the buyer is unnecessarily purchasing large quantities of water.

In many instances the woodchips need to be dried to increase calorific value, but this process can be costly. Additionally, overly moist material can start to degrade. This degrading process can result in the formation of combustible gasses with associated fire risks. Therefore an early

identification of wet product is important for site safety.

The reliable online moisture measurement of woodchips provides significant economic and safety benefits to the user. The real-time information on the moisture can be used to monitor the woodchips supply and lays the foundation for improved boiler efficiency. The drying process can be adjusted to the actual need, saving time as well as fuel costs. Online measurement of the woodchips allows identifying overly wet batches of product before the material enters the storage bunker.

### Moisture gauge types

Various types of moisture gauges are available to today's woodchip user. From simple hand held probe type units to more sophisticated permanently mounted online systems giving real time measurements. However if you are looking at gauges that provide an online and non-contacting measurement then the choices tend to be limited to NIR (Near Infrared) or Microwave Transmission systems.



MicroPolar moisture analyser from Berthold Technologies installed on a woodchip conveyor (with bulk density compensation)

Non-contact, online and real time Microwave analysers offer some advantages to the operator over NIR systems. The Microwaves are beamed through the wood chips giving representative information on the whole material layer.

As a second point Microwaves, unlike NIR, are not affected by any differences of the colour of the wood chips or light variations in the measuring area.

### MicroPolar online microwave analysers

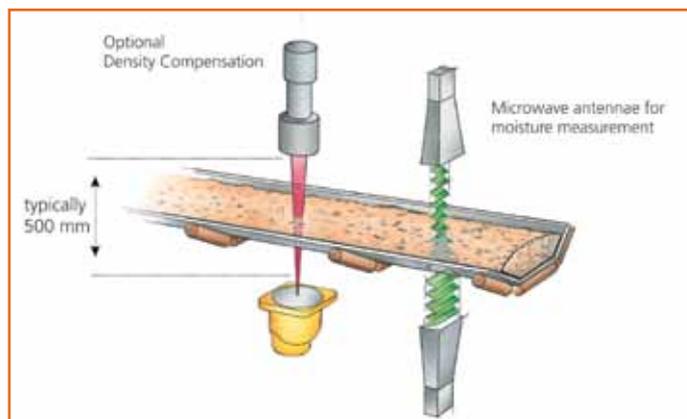
The MicroPolar Analysers from Berthold Technologies are specifically designed for these measurement tasks. Based on Microwave Transmission technology, the MicroPolar has some technical features that are key when measuring natural products like woodchips or pellets. Due to the multi-frequency technology (measurement at different frequencies), the system ensures a stable and reliable

measurement, unaffected by reflexes or resonances of the measured product. An integrated reference line eliminates any environmental influences, making it suitable for industrial environments. The Berthold system is also able to compensate for varying loading heights or bulk densities. This ensures accurate and representative results.

The real-time measurement results provided by an online moisture meter are beneficial in terms of safety and production costs. From the many technologies available on the market, the Microwave Transmission has proven to be one of the most representative and reliable technology. These analysers can be easily installed on existing conveyors and are not subject to frequent re-calibrations or maintenance. ●

### For more information:

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The Microwave Transmission principle ensures a highly representative measurement since the Microwaves penetrate the complete material layer