

Technical Moisture Meter PCE-MWM 300

Online measurement of moisture/density during the industrial production process of wood composite panels (i.e. PB, MDF, OSB) or pellets and wood chips is of fundamental importance in order to ensure that processes run as efficiently as possible, energy consumption is kept low and raw material losses are minimized.

In comparison to conventionally employed humidity sensors the use of a microwave moisture meter provides much higher consistency and product quality levels while reducing operating and maintenance costs at the same time. When the meter is connected to a controller or a process control system the operator has the ability to react to measurement results in real time.

This, in turn, results in less downtime during pressing or drying processes and the loss of material is reduced. The investment recovery period for the sensors is thus very small, usually it only takes a few weeks for it to pay off completely.

When it comes to online measurement the microwave sensor is a valuable tool in many stages of the production process: in refining of wood materials, in resin treatment, during pressing, de-watering and final drying. The moisture sensor provides particularly good results for the moisture measurement of sawdust and wood chips in pulps which are homogeneously mixed and pre-dried.

Technical Specifications of the Sensor for Pellets and Wood Chips

Measuring range	0 ... 100 %
Max. permissible absolute error of humidity measurement	±0.2 %
Reproducibility	±0.01 %
Working temperature range	0 ... +60 C / + 140 F
Working mode	continuous operation
Power supply	24 V DC
Input power	< 9 V
Radiation emitted by microwave sensor	< 0.1 W
Warm-up time at start-up	90 min.
Outputs	Ethernet 100 mbps, 4-20 mA
Input	2x digital 24V DC
Protection Class	IP66
Weight	5 kg

The increased accuracy of online moisture measurement and humidity control guarantees a more uniform final product (i.e. MDF, OSB). Additionally, since the drying process of these materials is very costly, controlling this part of the process efficiently, provides the greatest cost benefits. Drying temperatures which are set too aggressively are not only a waste of energy but they also lead to unwanted deterioration in fiber quality.

Here are some of the possible application areas for the Microwave Moisture Analyzers in manufacture and processing: fiberboard (PB, MDF, OSB), sawdust, woodchips (for combustion), wood slats, wood panels, and wood pellets. They are even employed when wood pellets are burned in industrial or combustion plants in order to control the pellet feed rate.