IS A PIN OR PINLESS MOISTURE METER BEST FOR YOU?





WAGNER METERS
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INTRODUCTION

Moisture meters come in two types: pin and pinless. While they both measure the moisture content of various materials, including wood, they do so using different technology. In this short guide we're going to go over the basics of pin and pinless moisture meters. At the end, you'll know which one is right for you. ■



PIN MOISTURE METERS

Pin moisture meters contain two small pins that need to physically penetrate the wood for a reading. When the meter is turned on, an electrical current flows between the two pins and measures the resistance between them.

The technology behind pin meters takes advantage of the fact that water–with salts and impurities–conducts electricity while wood doesn't. Therefore, the drier the wood, the more resistance there will be to the electrical current running between the two pins.

It's important to note that a pin meter measures the resistance between the two pins only and nowhere else. This means that unless you're measuring the moisture content of a very small piece of wood, you'll need to take multiple readings, each of which creates two small holes in the wood. Now, if you're measuring the moisture content of firewood, this isn't going to be a problem. However, if you're measuring the moisture content of fine wood furniture or hardwood floors, you're probably not going to be happy with all these holes in the wood.



PIN METER SENSITIVITIES

Pin meters are sensitive to both wood temperature variations, and the chemical makeup of the wood, which varies according to species. Failure to consult the temperature correction chart, or input the type of wood before taking a reading, will almost certainly affect the accuracy of the reading.

OTHER THINGS TO CONSIDER ABOUT PIN METERS

Pins can bend or even break, especially when you're measuring the moisture content of harder species of wood. Also, moisture on the surface of the wood will cause readings to be substantially higher. Therefore, be sure to wipe off any surface moisture and wait at least 30 minutes before taking a reading to ensure accuracy.





CALIBRATING YOUR PIN METER

All moisture meters need to be properly calibrated for accurate readings. While you can test to see if a pin meter is out of calibration, you'll need to send it back to the manufacturer if you want it recalibrated.



PINLESS MOISTURE METERS

Instead of pins, pinless moisture meters use electromagnetic sensors to measure moisture content by scanning from the surface of the wood. In other words, pinless meters are able to measure moisture content without damaging the wood's surface. This makes them valuable for measuring the moisture content of fine furniture and hardwood floors, and for quickly scanning many board feet in just seconds.

Pinless meters contain a sensor pad that must come into contact with the wood in order to take a reading. Some meters read up to 0.5" deep, others can read down to 0.75" or 1.5". Most wood projects involve taking readings of 0.75" stock but shallower readings can be useful too.



PINLESS METER SENSITIVITIES

Wood density (also referred to as ''specific gravity") varies according to species and pinless meters are sensitive to these variations. Therefore, you will need to make sure the meter has the correct species setting before taking a reading.

OTHER THINGS TO CONSIDER ABOUT PINLESS METERS

Some pinless meters are affected by surface moisture, and even a little condensation on the wood can produce a moisture reading 10-20% higher than the wood's actual moisture content. Our Orion moisture meters have a measurement circuit specifically designed to minimize this effect, so any water that doesn't soak in shouldn't affect the reading much. Still, with any meter, it's a good idea to always wipe off any surface moisture and then wait for around 30 minutes before taking a reading.

You'll also need to make sure you apply enough pressure to the meter while you're taking a reading. Not enough pressure and there might be a gap under the sensor that will affect the accuracy of the reading. In fact, with some less expensive pinless meters, even the position of your hand can affect the accuracy of the reading.





CALIBRATING YOUR PINLESS METER

Wagner's Orion line of pinless moisture meters are unique in that they can be recalibrated back to factory settings by the user in just a few seconds. So, there's no need to send an Orion back to the manufacturer for recalibration. You can do it yourself–something unique to the Orion line. Other pinless meters, including other Wagner pinless meters, cannot be calibrated in the field.



WHICH MOISTURE METER IS RIGHT FOR YOU?

The choice between a pin and a pinless meter really depends on what you're going to be doing with it. If you're only going to be measuring the moisture content of firewood, you can get away with a relatively inexpensive pin meter. If you're a professional woodworker or flooring installer, you'll probably want a higher-end pinless meter because you'll be able to quickly take a large number of accurate readings without poking holes in the wood.

Whichever meter you choose, you should aim for one that gives accurate, reliable, and consistent readings and then you should use it correctly. Even high-end moisture meters will produce inaccurate readings if they're not used properly. ■

For more information about moisture meters and how to choose the right meter for your application, call Wagner Meters toll-free at (844) 755-3366 or visit www.wagnermeters.com.