

Pinless Moisture Meter

User manual



Safety instructions



Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use.

Warning

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire or serious injury.

- ▶ Do not use the device in potentially explosive rooms or areas and do not install it there.
- ▶ Do not expose device to harmful or corrosive chemicals.
- ▶ Do not immerse the device in water. Do not allow liquids to penetrate into the device.
- ▶ The device may only be used in dry surroundings and must not be used in the rain or at a relative humidity exceeding the operating conditions.
- ▶ Protect the device from permanent direct sunlight.
- ▶ Do not expose the device to strong vibrations.
- ▶ Do not operate the device near medical equipment (e.g. pacemakers).
- ▶ Do not open the device.
- ▶ Do not operate the device near open electrical wiring.
- ▶ Risk of suffocation. Do not leave the packaging lying around. Children may use it as a dangerous toy.
- ▶ The device is not a toy and does not belong in the hands of children.

Warning of electrical voltage

- ▶ There is a risk of a short circuit due to liquid penetrating the housing. Do not immerse the device and accessories in water.
- ▶ Work on the electrical components must only be carried out by an authorised specialist company.

Product description and specifications

Intended use

This device is used for non-destructive determination of the material moisture approximately in 2 types of wood and 2 types of building materials, it based on the principle that the dielectric permittivity of the measured material changes with the change of moisture content, the moisture content of the measured material is deduced from the changed dielectric permittivity.

This device reading data is displayed as %, it is based on the dry mass of the measured material. The moisture content is calculated according to the following formula: moisture content in % = (mass of water contained in the material / dry mass of the material) x 100. Example: 1 kg of material containing 500 g of water = 100% material moisture.



The measured values may differ from the actual values. Measured values can be influenced by many factors, such as, building materials of the same type but with different designation/composition/strength/ density. **If different measured values occur, the reading should be viewed as relative value, can still be used to compare the measurement at this spot with another spot.**

Technical parameters

Minimum text area	50*50mm(1.97*1.97 inch)	
Measurement depth	≤19mm(0.75 inch)	
Measuring range	Wall: 0%~25%	Relative values
	Masonry: 0%~43%	
	Soft Wood: 0%~75%	
	Hard Wood: 0%~75%	

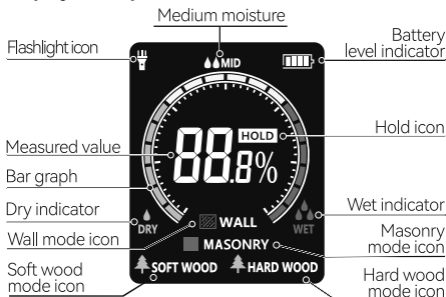
Accuracy	Soft wood&Hard wood: $\pm 4\%$
	Wall&Masonry: relative values
Auto switch off	5mins without operation
Alarm Mode	Indicator light and buzzer
Screen	2.6"
Battery	1*9V
Operation temperature	0~40°C (32~104°F)
Operation humidity	Max. 85%RH
Storage temperature	-10~50°C (14~22°F)
Size	150*67*28.5mm(5.9*2.6*1.1inch)
Weight	160g(5.6oz) include battery

Product features





Display description



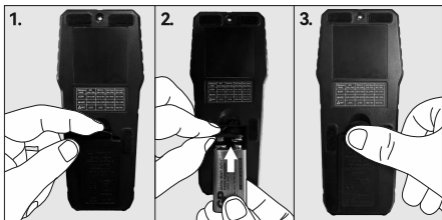
Battery level indicator

Icon	Capacity	Icon	Capacity
	75%~100%		< 25%
	50%~75%		Replace the battery immediately
	25%~50%		


Operation

1 Insert battery

Open the battery compartment, and insert a 9V battery. Correct polarity must be observed.



2 Switching On/off


Press the on/off button "  " to switch on/off the device. When the device is switched on again, the last selected measuring mode is preset in the device. The device will switch itself off Automatically to conserve battery life after 5 minutes without operation.

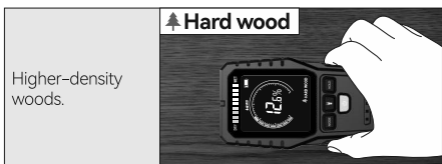


3 Start measurement

Selecting the measurement mode

For optimum measuring results, measurement mode must be selected according to the material characteristic before each measurement.

This instrument has 4 selectable measurement mode. Before making a measurement, press the button "  ", to select the appropriate material.



Reference tables of materials

Types of wall	
Gypsum plaster(Dry wall)	Aerated concrete

Types of masonry			
Cement screed	Anhydrite screed	Concrete	Brick




Types of softwood

Agba	Acer rubrum	Balsa	Birch
Buckeye	Cedar	Chestnut	Cypress
Fir	Lauan	Larch	Paulownia
Pine	Poplar	Red maple	Spruce

Types of hardwood

Alder	Ash	Afrormosia	Beech
Bloodwood	Bidinkala	Crabwood	Cherry
Canarium	Elm	Hickory	Imbuia
Keruing	Mahogany	Maple	Niove
Oak	Padauk	Pear	Rosewood
Rubber tree	Tola	Teak	Walnut

Reference table of moisture level

Moisture Level	Wall (0%-25%)	Masonry (0%-43%)	Soft Wood (0%-75%)	Hard wood (0%-75%)
 DRY	< 8%	<13%	<20%	<12%
 MID	8%-12%	13%-21%	20%-26%	12%-16%
 WET	> 12%	>21%	>26%	>16%




1. For wall&masonry measurement mode, the reading should be viewed as relative value.

2. Wallpaper affects the measurement to such an extent that the displayed value is falsified. Nevertheless, the reading can still be used to compare the measurement at this spot with another spot. The same is true of tiles, linoleum, vinyl and wood used to cover building materials.


3. Influenced by the surface treatments (e.g. paints), such wood measurements should only be viewed relatively.

Hold data


To hold the reading, press the hold button "  ", when the reading is stable.



4 Turn on/off the flashlight

In order to work in dark environments, this device is equipped with LED flashlight. Press the flashlight on/off button "  " to turn on or turn off.


5 Replace battery

Battery replace is required when the device can no longer be switched on or the battery icon shows low power "  ". Please remove the old battery, then observe the polarity mark in the battery compartment, and install new batteries according to the correct polarity.

6 Zero calibration

Zero calibration is suitable for special reasons that the instrument cannot reset its reading to "00.0%" without measuring any materials.

Calibration method

Hold the bottom of the instrument in your hand, and place it in an open area, then long press the button "  " about 3s until the screen displays a countdown release the button, after the countdown ends the screen will display "00.0%", the zero calibration is complete.

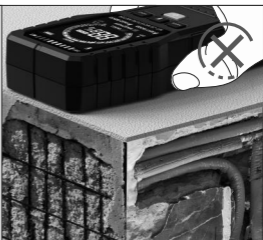


Application notices

The surface of the material to be measured should be kept clean and as level as possible to permit thorough contact of the measuring probe.

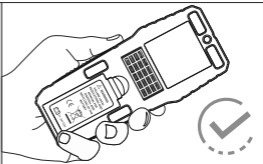


If the material to be measured contains metal (e.g. nails, screws, lines, pipes, etc.) and is situated within the sensor's measuring field, the measured value skyrockets due to intense reflections.



YES

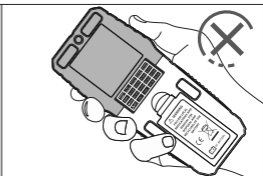
Keep fingers in the narrower part of the bottom when using



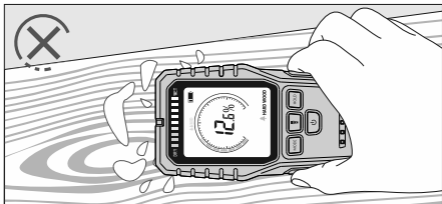
NO

Poor finger placement will cause an inaccurate reading

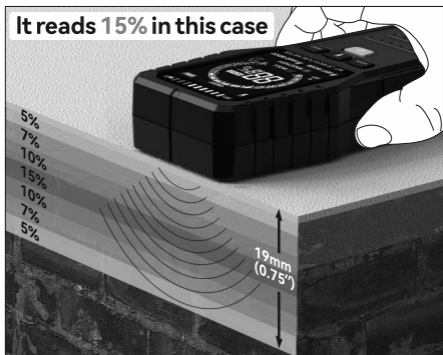
■ = Avoid



- ▶ There must be no metal inside the measuring material.
- ▶ The pinless moisture meter readings can be influenced by nearby metal, or your own fingers. Keep at least 5cm distance from metal. Keep fingers in the narrower part of the bottom when using, well clear of sensor.



- ▶ Do not use this instrument measure water or water attached to the surface of the material that has not yet been immersed in the material, it is pointless. Because this pinless moisture meter is not a instrument which can detect the presence of water molecules, but works according to the principle that the dielectric constant of the material changes with the change of humidity.



- ▶ Wipe measured material surface dry and neat for best results. In addition, the measured material (walls, masonry and wood) being measured is not stacked or sitting on wetter materials.
- ▶ The pinless moisture meter is penetrates up to 0.75inches deep, so wetter materials located below your subject material can also influence the readings, as can metal nails, workbench, your hand, etc.
- ▶ To accurately measure the moisture content of the material to be tested, it is recommended that the thickness of the material to be tested $\geq 5\text{mm}$, otherwise, the measurement value will be too low.
- ▶ If the thickness of the material to be tested is less than 19mm, due to the Max induction depth of the instrument is 19mm, in order to avoid interference from other materials, it is recommended to suspend or stack the material above 19mm before measurement.
- ▶ Make sure that the sensor make good contact with the material with no air inclusions.
- ▶ Always measure at several different spots.



This pinless moisture meter is a sensitive tool. This means that the measurement results may be subject to slight deviations when someone touches the device with their hand or when contact is broken between the device and the material being measured. However, contact with the user's hand forms the basis for calibrating the measuring device, so we recommend holding onto the device whilst taking your measurements.

Other factors that may affect the readings

- ▶ If possible, do not measure wood with a temperature below -5°C . Too low wood temperatures distort the result of the measurement.
- ▶ Avoid static charge of the material to be measured due to friction. Static charge distorts the measurement result.

- ▶ If a construction material contains electrically conducting substances, the dielectric constant is also increased, which then simulates high moisture values. Consequently, a too high measured value will be displayed.
- ▶ With a wood moisture of less than 10 % RH electrostatic forces may occur at the good to be measured. This can falsify the result of the measurement. Experience has shown that this occurs at the outlet of veneer drying plants. Remove the static charge by use of suitable grounding measures.
- ▶ From visual inspection it is not always apparent whether there are any electrically conducting substances inside the construction material. Some of the main error sources here are in particular reinforcements, metal laminations and conducting insulation such as slag in timber beam ceiling constructions. Especially in case of insulation materials with metal lamination, measured values are often misinterpreted.
- ▶ For optimum conditions neither electrical fields nor conducting materials should be present.
- ▶ Oily and/or aqueous timber preservatives affect the measurement result.

Transportation and storage

If you store or transport the device improperly, the device may be damaged. Note the information regarding transport and storage of the device.

Transport

For transporting the device use a suitable bag to protect it from external influences.

Storage

When the device is not being used, observe the following storage conditions:

- ▶ Dry and protected from frost and heat.
- ▶ Protected from dust and direct sunlight.
- ▶ The storage temperature complies with the values specified in the technical data.

Maintenance and repair

Cleaning

Clean the device with a soft, damp and lint-free cloth. Make sure that no moisture enters the housing. Do not use any sprays, solvents, alcohol-based cleaning agents or abrasive cleaners. But only clean water to moisten the cloth.

Repair

Do not modify the device or install any spare parts. For repairs or device testing, contact the manufacturer.

Waste disposal



Always dispose of packaging materials, batteries and waste electrical and electronic equipment in an environmentally friendly manner and in accordance with the applicable local disposal regulations.