

USER'S MANUAL

INDUCTIVE MOISTURE METER



Reference table of material moisture alarm threshold

Material	LCD display(digits)	Moisture level
Plaster and anhydrite	< 30	DRY
	30 ~ 60	RISK
	> 60	WET
Cement-based materials	< 25	DRY
	25 ~ 50	RISK
	> 50	WET
Wood	< 50	DRY
	50 ~ 80	RISK
	> 80	WET

Users can set moisture alarm thresholds for different materials according to this table. (Notes: they are indicative and non-binding.)

Comparison table of material moisture

LCD display	Plaster and anhydrite inCM%	Cement-based materials inCM%	Wood inCM%
15			
20			10.00
25			12.00
30	0.25		15.00
35	0.30	2.50	17.00
40	0.40	2.65	20.00
45	0.65	2.85	23.00
50	1.00	3.20	25.00
55	1.40	3.55	
60	1.70	4.00	
65	1.90	4.30	
70	2.05	4.70	
75	2.20	5.10	
80	2.35	5.45	
85	2.50	5.75	
90	2.65	6.10	

The instrument reading is a unitless value of 0-100, which is different from the CM% (calcium carbide method) moisture content. The user can switch the LCD display and CM% moisture content based on the data in this table. (For reference only, non-binding.)

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Symbols description



Warning of electrical voltage

This symbol indicates dangers to the life and health of persons due to electrical voltage.



Warning

This symbol indicates a hazard with an average risk level, which if not avoided, can result in serious injury or death.



Caution

This symbol indicates a hazard with a low risk level, which if not avoided, can result in minor or moderate injury.



Information marked with this symbol helps you to carry out your tasks quickly and safely.



Information marked with this symbol indicates that the instructions must be observed.

Safety



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 remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- 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.



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.



Warning of electrical voltage

Work on the electrical components must only be carried out by an authorised specialist company.



Warning

Risk of suffocation. Do not leave the packaging lying around. Children may use it as a dangerous toy.



Warning

The device is not a toy and does not belong in the hands of children.



Warning

Dangers can occur at the device when it is used by untrained people in an improper way. Observe the personnel qualifications!



Caution

Keep a sufficient distance from heat sources.

Information about the device

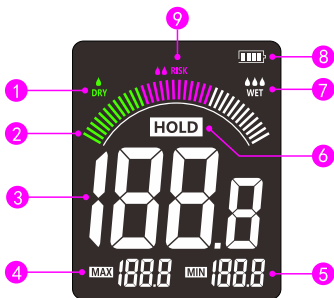
Product features

- With 58mm integrated alloy spherical probe, accurate detection.
- The self-developed advanced software algorithm ensures fast, accurate and stable measurement.
- With indicator light and buzzer (visual and audible) alarm design for more intuitive measurement results.
- With 2.9 inch large size HD color LCD screen, which is clearer and more beautiful.
- Powered by a rechargeable lithium battery, no need to replace the battery
- The shape is ergonomically designed for a comfortable grip.

Technical data

Probe length	58mm(2.3 inch)
Penetration depth	5 ~ 40mm(0.2 ~ 1.57 inch)
Measurement range	00.0 ~ 100.0
Measurement accuracy	±2.5%
Alarm	Indicator light and buzzer alarm
LCD	2.9 inch color LCD
Battery	320mAh Lithium Battery
Automatic power off	30 minutes
Operating temperature	0 ~ 45°C(32 ~ 113°F)
Storage temperature	-20 ~ 70°C(-4 ~ 158°F)
Operating humidity	0 ~ 75%
Size	207*67.5*26.6mm(8.1*2.6*1.1 inch)
Weight	170g(5.99oz)

Display screen description



- 1 Dry alert
- 2 Visual content alerts
- 3 Measurement data
- 4 Maximum icon
- 5 Minimum icon
- 6 Hold screen
- 7 Wet alert
- 8 Power icon
- 9 Risk alert

Device part description



- 1 Spherical probe
- 2 Display screen
- 3 Power button
- 4 UP button
- 5 Alarm threshold setting button
- 6 Hold screen button
- 7 Down button
- 8 Measure button
- 9 Product Nameplate

Operation

Power on

Press the button "  " to power on.

Measurement

1. After power on, calibrate the device as below (calibration required for the first measurement after each power-on): Press the button "  " and the device will beep and the flag "CAL" will appear on the LCD. During calibration, keep the device at least 100mm away from any object.
2. After calibration, make the probe contact with the surface of the measured material and slides within the desired measurement area, and the real-time measured digits will appear on the LCD, as well as the maximum and minimum digits during this testing .
3. If you need the measured digits displayed on the LCD unchanged, move the probe to that point and press the button "  " to lock the screen. Press this button again to unlock the screen and continue the measurement.
4. When the measurement is complete, press the power button to turn off the device. After 30 minutes of no use, the device will automatic power off .

During calibration, keep the device at least 100mm away from any object.



Step 1: After power on, press the button "  " to calibrate.

Keep the position of this hand relative to the device do not move



Step 2: Keep the position of this hand no move, make the probe contact with the surface of the measured material and move it to the desired measurement point.



Step 3: If you need to hold the measured digits displayed on the LCD, move the probe to the target point and press the button " **HOLD** " to lock the screen.



Step 4: When the measurement is complete, press the power button to turn off the device.



Notes on calibration

1. When calibration is complete, the reading on LCD must not exceed 0.3, if so, re-calibrate ensuring that hands or other objects are kept clear of the device.
2. The position of the hand can greatly affect a reading. Do not move or reposition the hand that holds the device while taking measurements or when calibrating the unit.



Notes on maximum and minimum

During the measurement, press the button " " 1 time is lock the screen and press 2 times is reset the maximum and minimum digits. The first measurement after the device turned on, since the minimum digits is recorded at the time of calibration, will always be displayed as "0". If you need to know the minimum digits of the measured material, please keep the probe contact with the measured material at all times, then press the button " " 2 times to reset the maximum and minimum digits.

Set the alarm threshold

Users can set RISK and WET alarm thresholds based on the table on page 2 or from their own experience.

● Set the RISK alarm threshold

Before the device calibrate or while the screen is hold, press the button " ", then the RISK icon will flash, It indicates that the RISK alarm threshold can be set at this time, use the up button " " and the down button " " to adjust the reading to the desired digits (setting range 1-49, default 30), and then press the button " " twice to exit the setting mode to complete the RISK alarm threshold setting.

● Set the WET alarm threshold

Before the device calibrate or while the screen is hold, press the button " " 2 times, then the WET icon will flash, It indicates that the WET alarm threshold can be set at this time, use the up button " " and the down button " " to adjust the reading to the desired digits (setting range 51-99, default 60), and then press the button " " to exit the setting mode to complete the WET alarm threshold setting.

Charge

When the battery is low, serious errors may occur in the measurement data. When the battery icon in the upper right corner of the display screen shows low power "  ", please use a Type-C charging line to charge the instrument.



Automatic power off

In order to save battery energy, if there is no operation within 30 minutes, the device will automatic power off.

Dielectric measurement an notes

Dielectric measurement is an indirect measurement method, 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. Fields of application include the non-destructive moisture measurement of sawed timber lumber and firewood as well as of mineral building materials.

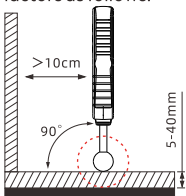
Another important variable that affects the measured value is the bulk density of the material to be measured, the higher the bulk density, the larger the measured value. The dielectric measurement method can only roughly measure the moisture value of the material, and if you need to obtain an accurate moisture value, it is recommended to use more specialized equipment.



Notes on use the moisture meter

No further settings are required for the quick determination of the material moisture at the device. Nevertheless, when assessing the

measurement results one has to bear in mind that the results can be influenced by various factors as follows.



● Performing the measurement

When the ball head is held to corners (eq. window frames), the measured value is generally higher, because there is more matter in the measuring head's stray field. Toward a corner a distance of more than 10cm has to be observed. When performing the measurement, always hold the ball head perpendicular to the material to be measured. Press the ball head firmly against the surface to be measured and make sure not to tilt it.

● Measuring depth

As shown in the image above, depending on the material's bulk density and degree of moisture penetration, the device's penetration depth amounts to 5 to 40 mm.

● Material characteristics

1. Increased occurrences of soluble salts in the measured material can distort the result of the measurement. The more salts present, the higher the conductivity of the material and the higher will be the displayed measurement value.
2. If possible, do not measure wood with a temperature below -5°C . Too low wood temperatures distort the result of the measurement.
3. The material should be preferably homogenous and not have any air pockets.

● Electrically conducting materials or electrical fields

1. 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.
2. 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.
3. Avoid static charge of the material to be measured due to friction. Static charge distorts the measurement result.
4. 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.
5. For optimum conditions neither electrical fields nor conducting materials should be present.
6. 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.

● Surface condition

1. Before measuring, the measuring point is to be cleared of any impurities (e.g. paint residues, dust).

2. Oily and/or aqueous timber preservatives affect the measurement result.
 3. Rough surfaces will always result in a too low measured value.
 4. The surface of the material to be measured should be as level as possible to permit thorough contact of the measuring probe.
- **Moisture distribution**
 1. With material thicknesses of less than 2 cm there is a danger of humidity values from adjacent material layers affecting the measured value.
 2. For optimum conditions, the moisture should be evenly distributed within the material to be measured.

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:

1. Dry and protected from frost and heat
2. Protected from dust and direct sunlight
3. The storage temperature complies with the values specified in the technical data
4. Remove the batteries from the device.

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.



This icon is taken from Directive 2012/19/EU. It states that this device must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. In the European Union, batteries and accumulators must not be treated as domestic waste, but must be disposed of professionally in accordance with Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators. Please dispose of batteries and accumulators according to the relevant legal requirements.