



- GM610
- GM620

Moisture Meter User's Manual



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1. Before use notice

Check up

Thanks for purchasing our product, please check if there are following items in the package, if there is anything missing or mismatched please contact the local dealer.

- | | |
|---|------|
| ○ Woods moisture meter | 1PCS |
| ○ Built-in cap | 1PCS |
| ○ Detachable cap(for model GM620 only) | 1PCS |
| ○ Detachable fork(for model GM620 only) | 1PCS |
| ○ AAA battery | 2PCS |
| ○ Manual | 1PCS |
| ○ Guarantee card | 1PCS |

Brief

This precision instrument applies the most advanced core technology in MCU application field, which features accurate output, convenient operation and 4-level adjustment, can be applied in measuring the moisture level in the woods, bamboo, paper and some Chinese medical plants

Features

- Adjustable for 4 tree species.
- Reading lockable.
- Auto temperature compensation for environment varying.
- Maximum moisture reading review.
- Backlight on/off switch.
- Applying CPU technology for accurate measuring.
- 2 pcs of AAA battery for power supply with battery icon for indication of power.
- Large LCD.
- Automatic turn-off if there is no further operation within 120 seconds while manual turn-off can be performed.
- Able to measure the environmental humidity and temperature.
- Compact and fine design with solid and light plastic material, Portable and easy operation.

Technical index

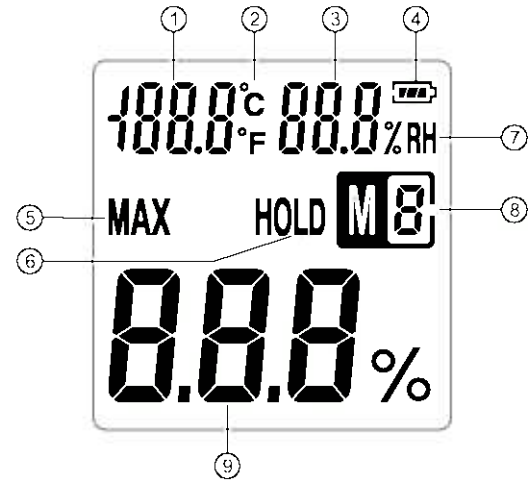
	Range	Max error	Resolution
Moisture	Spc1: 2~40%	±1%+0.5	0.5%
	Spc2: 2~50%		
	Spc3: 2~60%		
	Spc4: 2~70%		
Temperature	-10°C~60°C	±1°C	0.1°C
Humidity	20%RH~95%RH	±5.0%RH	0.1%RH
Operating environment	Temperature: 0°C~40°C; Humidity: 20%RH~95%RH		

	GM610	GM620
Weight	107.7g	115.8g(Meter only)
		133.3g (Meter with fork)
Excluding battery		
Size	135.6*55*29.4mm	144*55*29.4mm (Meter only)
		278*36*36mm (Meter with fork)
Fork	9.8mm	147mm

Table for various trees

Spc	Level	Spc	Level
Rhodes west teak	1	African whitewood	3
Ormosia hosiei	1	Rose wood	3
Brazil walnut tree	1	Elm tree	3
Walnut tree	2	Gmelina chinensis benth	3
Apitong	2	Hemlock	3
White poplar	2	Dipterocarpus	3
Teak	2	Oak	3
Banya pine	3	Chinese red pine	4
Douglas fir / D-fir	3	Coquito	4
Lauan	3	Abies holophylla maxim	4
Manchurian ash	3	Larch	4
European silver	3	Apitong	4
Maple	3	Birch	4
White ash	3	Basswood	4

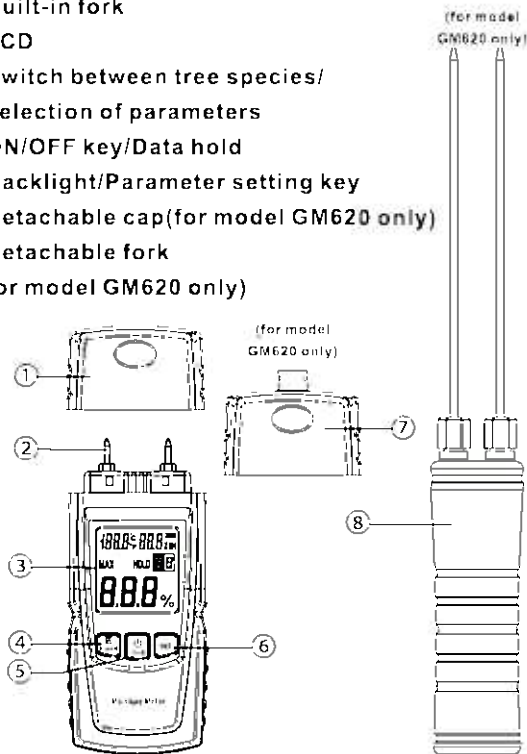
Display



- | | |
|------------------------|-------------------------------|
| 1. Temperature reading | 6. Data hold |
| 2. Temperature unit | 7. Humidity unit |
| 3. Humidity reading | 8. Selection of woods species |
| 4. Battery volume | 9. Moisture in woods |

Panel

1. Built-in cap
2. Built-in fork
3. LCD
4. Switch between tree species/
Selection of parameters
5. ON/OFF key/Data hold
6. Backlight/Parameter setting key
7. Detachable cap(for model GM620 only)
8. Detachable fork
(for model GM620 only)



2. How to operate

Operation


1. Install the battery and press the "ON/OFF" key to turn on.
2. Then press the "MAX" key to select the tree species from the given 4 levels accordingly as referred to in the table of page 4. If the wood is not these listed in the table, it is recommended to use level 2 as reference. But the error arising from the performance shall be considered. The 2 feet of the fork should be inserted into the woods at one time.
3. Press the "ON/OFF" key to hold the moisture reading with an HOLD icon on LCD. Press the "ON/OFF" key again to release the hold function.
4. Press on the "ON/OFF" key for 2 seconds to turn the device off.
5. Press the "SET" key to turn on the backlight. Press the "SET" key for 2 seconds to enter into parameter setting mode and the MAX icon flashes and "MAX" again to set the next parameter which appears in order of MAX-current moisture reading-°C-°F. Press the "SET" key to confirm the selected.
 - (1) When the MAX flashes press the "SET" key to display the Maximum readings of moisture saved.
 - (2) When the current moisture reading flashes, press "SET" key to display the current moisture reading.
 - (3) When °C flashes, press "SET" key to select Centigrade unit.
 - (4) When °F flashes, press "SET" key to select Fahrenheit unit.
6. The device turns off automatically within 2 minutes if there is no further key operation or moisture measuring.

Selecting level

If the moisture of the measured woods is not given, please select the level as follow:

Firstly measure the even moisture woods sample with the 4 levels respectively and record the readings. Then put the sample into the oven to measure the moisture, then compare the results with the above said 4 readings and fix the level for future measurement which is closest to the output measured with oven. If you can not measure in a way said above, it is recommended to measure at 2 level, but the error may arise must be considered.

Battery replacement

1. If there is " " icon appears on LCD, please replacethe battery immediately. If not an unexpected error may arise.
2. Open the battery door to take out the battery.
3. Insert battery as marked on the battery door.
4. Take out the battery if the device is expected not to use for a long time less the battery leak occurs.

3.Others

Attentions

1. When the value of wood moisture exceeds the range, "Hi" will be shown.
2. When the ambient temperature and humidity exceed the range, it will show "---";
3. This device features temperature compensation function, if the environmental temperature varies sharply, please operate the device after the temperature reading get stable.
4. The fork on the device is very sharp. do not point the device to the people or let the children to play with it.
5. Do not touch the device with the water or any erosive liquid lest the device damages.
6. Do not contact the fork with any object with electricity lest the device damages.

Difference between inductive moisture meter and fork type moisture meter

Electrical moisture meter basically is classified as DC resistance type(fork type) device and AC dielectric type (inductive type), the fork type pick up the resistance between the 2 feet of the fork and get the moisture reading ranging from 2% to 70%. Different tree species, direction of the woods texture, temperature and inserting depth are all the factors which may impact the reading output. Generally, the horizontal texture gives a smaller output than the vertical texture does. In practice we adopt the output tested with horizontal texture direction. The density of the tree has little impact on the moisture content in woods, for example, the soft banya pine has a great difference with the hard oak in respect of density, but they have a very similar moisture content with each other. Inductive type mete is based on the

work principal that the dielectric constant ϵ and tangent value $\tan \delta$ of power consumption angle are in proportion of the moisture content of the woods. And such instrument adopts plane electrode or club like electrode which contact closely with the woods while measuring. This type of instrument features quick and easy operation but bigger error in precision.

Different meters may output differently

Arising from different tree species, different temperature and origin of place and in most the portable moisture devices do not have adjustment levels in accordance with various tree species and humidity, different devices may result in different output.

Methods for measuring the moisture content in woods

Methods for measuring the moisture content in woods are drying-up method, electrical method, carbonization method, titration method and humidity method. In production, drying-up method and electrical method are generally adopted. With dry-up method, the woods weight difference between the original sample weight and dry-up weight after taking out from the oven will be calculated and be referred to as the moisture content index. This method features high precision but time-taking, just applicable to the laboratory practice. Electrical method adopts the working principal of woods electrical performance concerning with the moisture content in woods, can be widely applied in mass production.

Keep-up and maintenance

1. Case cleaning

- Use only the fresh water to clean the case of the product, forbidden to use any erosive liquid such as alcohol etc.
- Never impact it or operate and store it in humid environment

Do not store the product in the environment below:

- a. Humid or dusty environment.
- b. High density of salt or sulfur.
- c. Environment full of the other chemical gas.
- d. High temperature or humidity, or environment in direct sunlight.

2. Maintenance

Please refer to the guaranty card offered.

We hold no responsibility for the product due to the following reason.

Unauthorized disassembly of the product, improper transportation after purchasing and wrong storage, damage due to abuse, failure to provide purchasing proof or unauthorized amendment on the purchasing invoice/guaranty card.

3. Claim

- a. We reserve the right to change the specification or instruction manual of the product without further notification.
- b. Our company shall hold no any responsibility resulting from using output from this product as an direct or indirect evidence.
- c. Old battery dealing must be complied with the local law and regulations.