

# MOISTURE METER (Pin Type)

This Moisture Meter is small in size, light in weight, easy to carry. Although complex and advanced, it is convenient to use and operate. Its ruggedness will allow many years of use if proper operating techniques are followed. Please read the following instructions carefully and always keep this manual within easy reach.

- 3-1 Pin probe
- 3-2 Display
- 3-3 RS-232 data line jack
- 3-4 Color coded LED
- 3-5 Measure key
- 3-6 Read key
- 3-7 Power key
- 3-8 Backlit key
- 3-9 Select key
- 3-10 Delete key
- 3-11 Plus key
- 3-12 Minus/Zero key
- 3-13 Battery cover
- 3-14 External power

## 4. MEASURING PROCEDURE

4.1 Depress the power key and release to power on the meter.  
4.2 To check if the material code is right by pressing and releasing the Select key. Such code can be changed by the Plus key or Minus/Zero key when the "cdxx" is on the display. Here "cd" is the abbreviation for "code" and "xx" is the material no. If keep depressing the Plus key or Minus/Zero key, the material code will step into next code about every second and releasing it till the material code is right.  
4.2.1 Code selection.  
The material code is listed in the table on page 7. Please select the standard code "cd00" if the material to be measured is not listed in the table or to ascertain its material code by the standard oven-drying

## 1. FEATURES

\* Be a powerful and versatile instrument for measuring and diagnosing dampness in buildings and building materials. This product enables building surveyors and other practitioners to measure moisture levels of building elements such as walls, floors and other building materials simply in 2 different indicating ways. In such case, a detailed understanding of the moisture condition of the property can be obtained.  
\* Digital display gives exact reading with no guessing or errors while a colour coded light (LED) indicates the moisture condition of the material. This combined presentation of moisture measurement helps the user to map the extent of problems and monitor changes in condition precisely and reliably.  
\* Used the exclusive Micro-computer LSI circuit and crystal time base to offer high accuracy measurement.  
\* Alarm values can be set by users.  
\* Automatic power off to conserve power.  
\* Can communicate with PC computer for statistics and printing by the optional cable

method.  
4.2.2 Factors affecting the choice of material code.  
There are many factors to affect the material code, for instance, different places, different soil even if in a same place will lead to different code for a same material. The better way to ascertain the material code is based on standard tests by oven-drying of commercial samples of the material to be measured. The code by which the measuring results are closest to those of oven-drying method is the right code. Write down the code for such material for later uses.  
4.3 Moisture measurement  
4.3.1 Push pins firmly into the surface of the material about 6mm deep at the required point.  
4.3.2 Read the moisture level value from the display and note the moisture condition of the material from the colour coded LED.  
4.4 Zero calibration  
The zero feature enable the user to compensate for the effect of changes in both temperature and humidity.

and software for RS232C interface.  
\* Can store 240 groups of measurements.  
**2. SPECIFICATIONS**  
Display: 4 digits, 10 mm LCD  
With colour coded LED indication  
Green LED represents a safe, air-dry state.  
Yellow LED represents a borderline State.  
Red LED represents a damp state.  
Measurement Range: 0~80%  
(when code=cd00 in a Pin mode)  
Measurement code: 10 codes for up to 150 species of materials  
Accuracy:  $\pm (0.5\%n+1)$   
Resolution: 0.1  
PC interface: RS232C interface  
The statistics available are:  
Last value / Mean value / Max. value / Min. value / Number of Readings  
Memory: 240 groups  
Power supply:  
4x1.5 AAA size (UM-4) battery  
Operating conditions:  
Temperature : 0-50 °C  
Humidity : below 90% RH  
Dimensions: 150x65x30mm

Press the Power key to switch the meter on. Let the pins of the meter touch nothing except air. And press Minus/Zero key to make the meter display "0" if other digits on the display. The meter is now zeroed.  
**5. ALARM LIMITS**  
5.1 There is a coded colour LED indicating the status of moisture. It is controlled by 2 alarm limits. The factory setting are as follow.  
AL1 = 13 and AL2 = 18  
If the reading < AL1, the green LED is on.  
If the reading > AL2, the red LED is on.  
If the reading lies between AL1 and AL2, the yellow LED is on.  
Users can change the alarm limits when as per their intention.  
5.2 How to set the alarm limits  
5.2.1 Depress Select key and not release it till "AL1" "AL2" appears on the Display. It is about 7 or 9 seconds from starting depressing Select key.  
5.2.2 Such value can be changed to your intended.  
Value by depressing the plus key or minus key. Depress the Select key to return to

Weight: 324g (not including batteries)  
Standard accessories included :  
Carrying case 1 pc.  
Operation manual 1 pc.  
Optional accessory  
Cable and software for RS232C

## 3. FRONT PANEL DESCRIPTIONS



the state of measurement. If the second limit AL2 is less than the first limit AL1, the setting is invalid and the factory settings for AL1 and AL2 are restored to AL1=13 and AL2=18 automatically.  
**6. CONSIDERATIONS**  
6.1 This instrument is of very high input resistance. Every parts have good insulation. Please keep it in a dry, dustproof place.  
6.2 The measurement result may be different if taking the measurement from different directions of the surface. That is because water in the material is not distributed evenly.  
**7. STATISTICS**  
The meter calculates and displays a statistical analysis of readings as they are taken. The statistics available are:  
\* Last value  
\* Mean value marked by Ave  
\* Highest Reading marked by Max.  
\* Lowest Reading marked by Min.  
\* Number of Readings taken  
In the measurement mode marked by SV, last value could be deleted singly by

pressing the Del key and restatistics is calculated and displayed itself.

## 8. STORING AND RECALLING READINGS

8.1 Readings taken are automatically saved to the memory of the meter. The memorized data can be browsed by pressing and releasing the RD key to enter into the browsing state marked by 'READ' on the display.

8.2 In the browsing state, all the readings memorized can be recalled on the display by depressing the Plus key or the Minus key.

8.3 To delete singly a memorized value in the memory, just locate the reading to be deleted by the Plus key or Minus key, then press and release the Del key. If there is an "Err0" on the display, it indicates there is no reading to delete any more.

8.4 To quit to the measurement state, just depress the Zero key.

## 9. DELETING READINGS

9.1 To delete a reading on the display, just press the Del key no mater in the measurement state marked "SV" or in the browsing state marked by "RD". Go into the

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Cd06	Calophyllum brasiliense, Guarea cedrata, white Guarea
Cd07	Abies procera, Agathis robusta, Betula pendula, Croton megalocarpus, Prunus avium, Agba, Birch( European), Cedar ( west Indian), black Guarea, Kauri ( queensland), Walnut( African), Cherry (european), Utile
Cd08	Chipboard, Paper
Cd09	Building, Wall, Concrete

browsing state by pressing the Read key while entering the measurement state by pressing the Zero key.

9.2 To delete all the readings in the memory, just depress the Del key in the measurement state marked by "SV" on the display for about 5 seconds till the number of readings memorized becomes 0.

## 10. TRANSFERRING READINGS TO A COMPUTER


10.1 Install the RS232 software on your PC, please always click " the continue " button in the installing process.

10.2 Connect your meter to your PC using the optional cable.

10.3 Switch on your meter and ensure the Reading Screen is displayed.

10.4 Start the software and follow the instructions included with the software Demo.EXE

## 11. BATTERY REPLACEMENT

11.1 When it is necessary to replace the battery, the battery symbol  will appear on the Display.

11.2 Slide the Battery Cover ( 3-13) away from the instrument and remove the batteries.

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11.3 Install the batteries (4x1.5vAAA/UM-4) correctly into the case.

11.4 If the instrument is not to be used for any extended period, remove batteries.

## Appendix: Code table for a Pin mode

Code	Materials
Cd00	Abies grandis, Acer macrophyllum, Maple, Acer saccharum, Pine(scots), yellow Pine, Dalbergia latifolia, Dipterocarpus zeylanicus, Eucalyptus microcorys, Fraxinus excelsior, Cupressus spp, Pinus contorta, Pterygota bequaertii, Quercus robur, Pinus sylvestris, Balsa, Boxwood (maracaibo), red Gum (American), Gum spotted, Gurjun, Birch, Cypress(African) Karri, Oak(European), Oak (Japanese), black Poplar, Redwood(Baltic European), Rosewood (Indian), Pine (lodgepole), Tallowwood, Walnut (American), Kapur.
Cd01	Araucaria bidwillii, Eucalyptus crebra, Eucalyptus saligna, Flindersia brayleyana, Fraxinus Americana, Intsia bijuga, Podocarpus dacrydioides, Sequoia sempervirens, Pinus pinaster, Gum (southern), Mahogany (west Indian), Douglas fir, Maple (queensland), red (light or dark) Meranti, white Meranti, Redwood (Californian), Walnut (new guinea), white Pine (new Zealand), Araucaria angustifolia.

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Cd02	Distemonanthus benthamianus, Jarrah, Endiandra palmerstonii, Erythrophleum spp, Abies alba, Fagus sylvatica, Grevillea robusta, Juglans regia, Larix deciduas, Larix occidentalis, Podocarpus spicatus, Picea abies, Pinus caribaea, Pinus nigra, Pinus palustris, Pinus ponderosa, Pinus radiata, Taxus baccata, Thuja plicata, Tsuga heterophylla, red Cedar (western), Chestnut Greenheart, Hemlock (western), Larch ( European), Larch (Japanese), Queensland walnut, red Seraya, Spruce, Silky oak (African), Silky oak(Australian), Pine (Corsican), Pine, radiata, Walnut(European), Walnut (queensland), Whitewood, Yew, Pine (ponderosa), Stringybark, Oak (tasmanese)
Cd03	Khaya senegalensis, Podocarpus totara, Quercus cerris, Ulmus American, Ulmus procera, Ulmus thomasii, Afzelia, Kauri ( new Zealand), Lime, Elm( English), white Elm, Matai, Oak( Turkey), Pyinkado
Cd04	Acer pseudoplatanus, Carya glabra, Sycamore, Cassipourea elliotii, Dipterocarpus(keruing), Teak, Cordia alliodore, Larix occidentalis, Pterocarpus soyauxii, Hickory, Padauk( African)
Cd05	Afrormosia elata, Diospyros virginiana, Gonystylus macrophyllum, Pterocarpus indicus, Afrormosia, Amboyna, Basswood, Coachwood, Persimmon

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