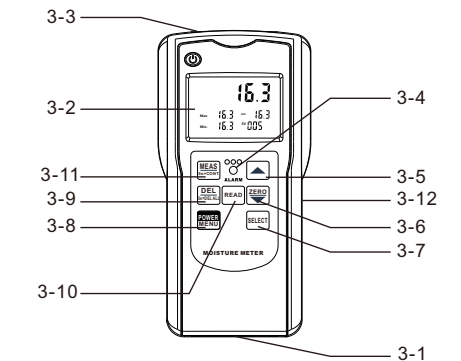# MOISTURE METER

(Search type)

AM-128S

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 techniqu-es are followed. Please read the following instructions carefully and always keep this manual within easy reach.

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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 by switching between the two different modes of operation. In this way, 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 materials. 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.

* Wide measuring range and high resolution.
* Automatic power off to conserve power.
* Can communicate with PC computer for statistics and printing by the optional cable and software for USB interface.
* Can store 240 groups of measurement results with statistical functions.

2. SPECIFICATIONS

Display 4 digits, 10 mm LCD
   With colour coded LED indication
      Green LED represents a safe, air-dry state.

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Yellow LED represents a borderline State.
Red LED represents a damp state.
Measuring range:
   0~70%(when code=cd10)
Measuring code:
   20 codes for different materials
Accuracy: ±(0.5%n+1)
PC interface: USB interface
Power supply: 4x1.5 AA A size (UM-4) battery
Power off : 2 modes
      Manual off at any time
      Auto power off after 5 minutes from last key operation
Operating conditions:
      Temperature: 0~50°C (32~122°F)
      Humidity: < 90% RH
Dimensions:
      Main unit: 140x70x31mm 5.5x2.8x1.2inch
      Contact area of sensor: 40x16mm
Weight: 130g (not including batteries) 4.59oz
Standard accessories included :
      Carrying case 1 pc.
      Operation manual 1 pc.
Optional accessory
      Cable and software for USB

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3. FRONT PANEL DESCRIPTIONS

3-1 Search probe
3-2 Display
3-3 Data cable interface
3-4 Color coded LED
3-5 Plus key
3-6 Minus/Zero key
3-7 Select key
3-8 Power/Menu key
3-9 Delete key
3-10 Read key
3-11 Measure key
3-12 Battery compartment/ Cover

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 pres-sing 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' 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 standard material code for the search mode is 'cd10' which is suitable for measuring the material whose density is like that of pine, fir, oak etc. The user can carry out the accurate measure-ment by selecting one material code between 'cd01' and 'cd20'. The greater the density of the material to be measured, the larger the material code to be selected. For measuring moisture in concrete wall, the user can select the code around 'cd18'. Please refer the Appendix on page 9 when selecting the code. This code is only for reference due to many uncertain factors for materials to be measured.

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

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ascertain the material code is based on standard tests by oven-drying of commercial samples of the mat-erial to be measured. The code by which the mea-suring 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 Place the search probe against the surface of the material such as wall, floor etc. at the point of measurement.
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 compen-sate for the effect of changes in both temperature and humidity. Zero calibration should be carried out independently in different modes.

5. STATISTICS

The gauge calculates and displays a statistical analysis of readings as they are taken. The statisti-cs available are:
* Last value
* Mean value marked by Ave
* Highest Reading marked by Max.
* Lowest Reading marked by Min.
* Number of Readings taken
When stored data exceed 99 groups, the latest value will be memorized, while the earliest one will be deleted, and so on.

6. STORING AND RECALLING READINGS

6.1 Readings taken are automatically saved to

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the memory of the gauge. The memorized data can be browsed by pressing and releasing the 'Read key' to enter into the browsing state marked by "RD" on the display.

6.2 In the browsing state, all the readings mem-orized can be recalled on the display by depress-ing the 'Plus key' or the 'Minus/Zero key'.

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

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

7. DELETING READINGS

7.1 To delete a reading on the display, just press the 'Delete key' no mater in the measurement state marked 'SV' or in the browsing state marked by 'RD'. Go into the browsing state by 'RD'.Go into the browsing state by pressing the 'Read key' .

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

8. ALARM LIMITS

8.1 There is a coded coloured LED indicating the status of moisture. It is controlled by 2 alarm limits. The factory settings are as follow.

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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.

8.2 How to set the alarm limits

8.2.1 Depress 'Select key' and not release it till 'AL1' 'AL2 ' appears on the Display. It is about 3 seconds from starting depressing the 'Select key'.

8.2.2 Such value can be changed to your intended Value by depressing the 'Plus key' or 'Minus key' . Depress the Select key to return to 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.

9. CONSIDERATIONS

9.1 Please keep it in a dry, dustproof place.

9.2 The measurement result may be different if taking the measurement from different directions of the surface. That is because water in the mater-ial is not distributed evenly.

10. BATTERY REPLACEMENT

10.1 When it is necessary to replace the battery, the battery symbol '⊏⊒⊐' will appear on the display.

10.2 Slide the Battery Cover (3-4) away from the instrument and remove the batteries.

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

10.4 If the instrument is not used for a extended

period, remove batteries.

11. TRANSFERRING READINGS TO A COMPUTER

11.1 Install the software on your PC, please always click 'the continue' button in the installing process.

11.2 Connect your gauge to your PC using the optional cable.

11.3 Switch on your gauge and ensure the Reading Screen is displayed.

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

12. APPENDIX

Density-Code table (only for reference)

Density	Code	Material
Kg/m³		(Only for reference)
200	1	
220	2	
240	3	Foam Soft wood
320	4	Felt
400	5	Peat Charcoal
440	6	
480	7	Coke
520	8	White lime
560	9	Veneer
600	10	Timber, Chipboard
800	11	Leather, Slag, Kerosene, Alcohol Polyethylene
1000	12	Soft coal, Bamboo, Paraffin ABS
1200	13	Clunch,Organic glass Asphaltum, lime
1400	14	Bakelite, fiberboard Rubber
1600	15	Stone, Sand (dry) Clayey brick
1800	16	Asbestine board Vitriol（87%）
2000	17	Sand (wet) Bricklaying, Firebrick
2200	18	Quartz glass Concrete,Asbestos, plaster
2500	19	China, Glass
3000	20	Magnetite, Granite, Marble