

MOISTURE METER

AM-118PS

This Moisture Meter is small in size, light in weight, easy to carry, 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.

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 computer for statistics and printing by the optional USB cable or Bluetooth Adapter.

2. Specifications

Display: 4 digits LCD

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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.

Range: 0 to 80% (Pin)
0 to 70% (search)

Accuracy: $\pm(0.5\%n+1)$

Resolution: 0.1

Measurement code:

10 codes for Pin

20 codes for Search

Power off: 2 modes

Manual off at any time

Auto power off after 5 minutes from last key operation

Power supply: 4x1.5 AAA size battery

Operating condition:

Temperature 0~50°C (32~122°F)

Humidity <90%

Size: Main unit: 182x62x26mm

(7.2x2.4x1.0inch)

Length of pin: 10.5mm

Diameter of pin: 1.9mm

Distance between 2 pins: 25mm

Contact area of search sensor:

44x16mm

Weight: 130g (not including batteries)

4.59oz

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Standard accessories:

Main Unit, Search Cap, Pin Calibration Cap, Carrying case, Operation manual.

Optional accessories:

USB data output, Bluetooth data output

3. Front Panel Descriptions

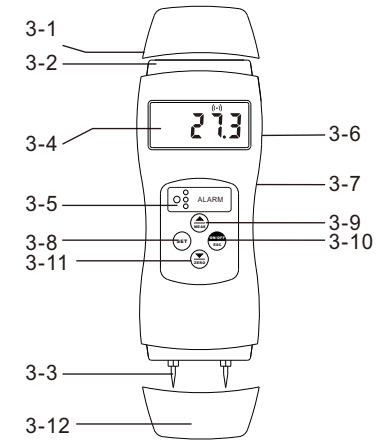


Fig. 1

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- 3-1 Search Cap
- 3-2 Search Probe
- 3-3 Pin Probe
- 3-4 Display
- 3-5 Colored Alarm LED
- 3-6 Jack for USB Cable
- 3-7 Battery Compartment
- 3-8 Settings/Confirm Key
- 3-9 Measuring/Upward Key
- 3-10 Power/Escape Key
- 3-11 Downward/Zeroing Key
- 3-12 Pin Calibration Cap

4. Device

4.1 Switching on

* Press the Power Key to switch on the meter. At once the meter will be ready to operate. It is in the hold mode now. The alarm indication shines green.

* To switch off the meter, keep the Power Key depressed for two seconds.

4.2 Entering the material temperature

* The user can enter the temperature of the measurement material into the meter. As the measured value depends on the material temperature, the meter will perform an automatic temperature compensation on the basis of the temperature entered by the user.

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* To enter the temperature value into the meter follow the steps below (see short manual at the end of this manual):

* Measure the material temperature with temperature meter.

* Switch on the moisture meter and press the Settings/Confirm Key.

* The temperature value, that was entered last, will appear on screen.

* Increase or reduce the value with the upwards and downwards keys.

* Press the Settings/Confirm Key to confirm. The menu to select the measuring mode appears on screen.

* (If you do not want to change the measuring mode, press the Power/Escape Key instead of confirming).

4.3 Selecting the measuring mode

As the moisture meter offers two measuring modes, you have to select the measuring probe. Proceed as follows:

* After having switched on the meter press the Settings/Confirm Key twice to bring up the menu for selecting the measuring mode.

"PB" (Probe) and the respective symbol for the dielectric measurement and the resistance measurement will be displayed.

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* Press the Upwards Key to select the dielectric measuring mode (measurement with probe at the top of the device). In the top of the display ((•)) and a square with the opening facing downwards will appear.

* Press the Downwards Key, to select the resistance measuring mode (measurement with needles). At the bottom of the display a square with the opening facing downwards will appear.

* Press the Settings/Confirm Key to confirm. You are now in the menu to select the material codes. (If you do not want to change the measuring mode, press the Power/Escape Key instead of confirming).

4.4 Selecting the material code

The measured moisture content of materials depends on the type of material and other factors.

4.4.1 Material code resistance measurements (needles/electrodes)

For resistance measurements, 10 different material codes 'Cd00' to 'Cd09' can be assigned on the moisture meter in conjunction with the following table of material codes:

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Cd	Material
00	Oak, pine, walnut (American)
01	Douglas fir, meranti (white)
02	Beech, spruce, walnut (European), larch, sweet chestnut, silver fir
03	Lime wood, elm
04	Teak
05	Afromosia, ebony
06	Guarea
07	Cherry, birch, walnut
08	not assigned
09	Wall, concrete

4.4.2 Material code for dielectric measurements

For the dielectric measurement, the material codes 0 - 20 can be chosen.

The material code for measurements with the dielectric probe is selected based on the bulk density of the material to be

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measured; it should be noted that with increasing bulk density, the material code to be selected also increases.

1. The codes 'Cd05' to 'Cd10' are suitable for taking measurements of wood (bulk density approx. 400 to 600 kg/m³).
2. The codes 'Cd15' to 'Cd18' are suitable for taking measurements of brickwork, floor screed and concrete (bulk density approx. 1600 to 2200 kg/m³).

4.4.3 Material code of unknown materials

In order to classify unknown materials more exactly, it is possible to determine the moisture in the material by means of a drying test. The appropriate code for the material measured is the one whose setting on the instrument leads most closely to the result indicated by the drying test. If no drying test is done, we recommend to measure unknown wood materials with Cd00, though the measurement may not be precise in this case.

4.4.4 Entering the material code

- * After having switched on the meter press the Settings/Confirm Key three times to bring up the menu for selecting the material code.

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6. Changing the batteries

If the battery voltage gets too low, the battery symbol is displayed and the display contrast becomes weaker. The battery should be replaced.

- * To do so open the battery compartment at the rear of the instrument, remove the old batteries and replace it with 4 new batteries 1.5 V, AAA. Observe the right polarity.
- * If the instrument is not to be used for any extended period, remove batteries. Avoid battery corrosion damaging the instrument.

7. Maintenance and care

Proper operation of the AM-118 requires regular control of the electrodes. The lifetime of the electrodes depends on the treatment of the meter and on the hardness of the wood. The user himself can change the electrodes. The following maintenance work has to be done.

7.1 Maintenance work

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"cd00" and a small "s" as well as the symbols for the selected measuring modes will appear on screen.

- * Enter the correspondent material code with the Upwards and Downwards Keys.
- * Press the Settings/Confirm Key to confirm. You are now in the menu to enter the alarm threshold values. (If you do not want to change the alarm threshold values, press the Power/Escape Key instead of confirming).

4.5 Alarm threshold

Two alarm thresholds can be set on the instrument to facilitate rapid assessment of the moisture content of the material. The setting is displayed on a 3-colored LED (see fig.1, part 3-5).

The following statuses are possible:

1. Indicated value < AI1: green
2. Indicated value ≥ AI1 and < AI2: yellow
3. Indicated value ≥ AI2 red

4.5.1 Setting the alarm threshold

- * After switching on the meter press the Settings/Confirm Key four times to bring up the menu for setting the alarm threshold.

"AI 1" and subsequently the setting for the lower alarm threshold relating to the

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Interval	Maintenance work
Regularly	Control the distance between the electrodes (25 mm)
When the electrodes are damaged or broken	Broken or damaged needles can be exchanged by an appropriate tool (gripper, screw wrench or ring wrench). Loos-en the damaged needles with the tool. Replace the damaged needles by the tool and fix the new needles with the tool. ATTENTION! The tips of the needles are very sharp. Therefore the needle should always be protected by the protection sponge.
In case of pollution	Only clean the meter with a soft cloth if necessary. Make sure that no water can penetrate into the meter.

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relative humidity will be displayed. Furthermore the symbols of the chosen measurement mode will appear.

- * Enter the value for the lower alarm threshold with the Upwards and Downwards Keys.
- * Press the Settings/Confirm Key to confirm. "AI 2" and subsequently the setting for the upper alarm threshold relating to the relative humidity will be displayed.
- * Enter the value for the upper alarm threshold with the Upwards and Downwards Keys.
- * Press the Settings/Confirm Key to confirm.
- * The meter will return to the menu for entering the material temperature.
- * Press the Power/Escape Key to bring up the hold-mode again.
- * Press the Measuring Key to bring up the measuring-mode.

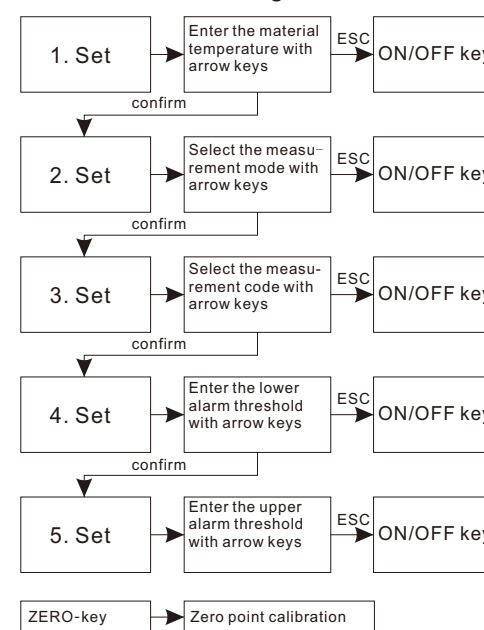
4.6 Zero point calibration

The instrument zero point should be calibrated before each measurement.

- * To do so, hold the moisture meter in the air without allowing it to come into contact with any material.
- * Then press Zeroing Key in normal measurement mode. The moisture meter

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8. Short Manual : Settings



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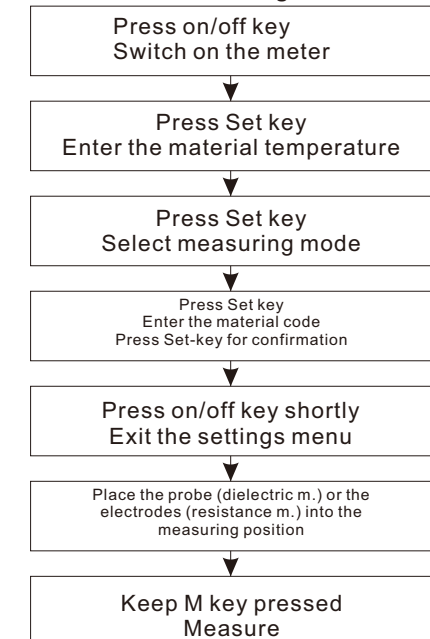
automatically sets and displays the zero point.

5. Measuring

- * Switch on the meter. It is in the hold mode now.
- * Press Settings/Confirm Key and enter the material temperature (see chapter 4.2).
- * Press Settings/Confirm Key and select the measuring mode(resistance measurement or dielectric measurement), see chapter 4.3.
- * Press Settings/Confirm Key, enter the material code and confirm with the Set key, see chapter 4.4.
- * Press the Power/Escape Key to close the settings menu and to bring up the hold-mode again.
- * Depending on the chosen measurement mode bring the probe for the dielectric measurement or the electrodes for the resistance measurement into the measuring position.
- * **Press the Measuring Key to bring up the measuring-mode and hold the key pressed during the measurement.**
- * As soon as you release the Measuring Key, the meter will enter the hold mode again and show the last measured value.

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9. Short manual "Measuring"



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