OPERATING INSTRUCTIONS
MODEL 290 $C\epsilon$
MOISTURE METER

INTRODUCTION

This instrument is designed to measure the moisture contents in wide range of materials by means of measuring conductivity of the measured material with a pair of needle shape sensing electrodes.

SAFETY INFORMATION

It is recommended that you read the safety and operation instructions before using the Material Moisture Meter.

1. When not use for long time remove battery.
2. Don't keep in place with high Temp, or high humidity.

WARNING

To avoid electrical shock, do not use this instrument to measure the surface with the danger of voltage that will be exposed to.

WARING

• When the meter is not in use, make sure the cap is closed to avoid getting hurt.
• Take care of risk of injury from sensing electrodes.

SPECIFICATIONS
MEASURING RANGE
Sensor: Electrical Resistance
8.8 to 54.8%
  For beech, spruce, larch, birch cherry and walnut (Grouped as wood 1)
7.0 to 47.9%
  For oak, pine, maple, ash-tree, Douglas-fir and meranti (Grouped as wood 2)
0.9 to 22.1%
  For cement screed, concrete and plaster (Grouped as mortar 3)
0.0 to 11.0%
  For anhydrite screed (Grouped as mortar 4)
0.7 to 8.6%
  For cement mortar (Grouped as mortar 5)
0.6 to 9.9%
  For lime mortar (Grouped as mortar 6)
0.1 to 16.5%
  For brick (Grouped as mortar 7)
Accuracy: conductivity measurement:
  ±1% at 23±5°C(73.4±9°F)
Temperature Coefficient:
  10% per °C out of 23±5°C(73.4±9°F)
Resolution: 0.1%
Measuring Rate: 1 measurement/second
Operation Environment:
  0 to 60 °C (32°F to 140°F) and Relative Humidity <70%
**Storage Environment:**
  -20 to 60°C(-4°F to 140°F) and Relative Humidity <80% with battery removed
Battery: 1.5Vx2pcs AAA size
Battery Life:
  250 hours typical with alkaline battery
Low battery indication:
  The "⊏▭" is displayed when the battery voltage drops below the operating level
**Dimensions:**
 24.7mm(T) x 50.9mm(W) x 132.9 mm(H)
Weight:
 Approx 117g including batteries

OPERATIONS

There are 3 operation modes, namely Measurement Mode, Set Mode and Hold Mode.

1. Turning on and off the meter:
  When power is off, a short push on "⏻" key turns on the meter and enter Measurement Mode. When power is on, press and hold "⏻" key for 2 seconds turns the power off.

2. Measurement Mode:
  "⏻" key powers on and off this meter. When power is off, a short push on "⏻" key turns on the meter and enter Measurement Mode.
  Right after power on, all the indicators on the LCD display lights up for one second.

Backlight:
In measurement mode, a short push on "⏻" key turns on the backlight for dark environment, it goes off automatically after 15 seconds if without further operation.

Material selection:
Press "▲" key to select the material. Keep pushing the key until the desired material appears.
  wood 1: beech, spruce, larch, birch, cherry, walnut
  wood 2: oak, pine, maple, ash-tree, Douglas fir, me anti.
 mortar 3: cement screed, concrete, plaster
 mortar 4: anhydrite screed
  mortar 5: cement mortar
  mortar 6: lime mortar
  mortar 7: bricks

Testing the instrument function:
Press "▲" several times until "Test:" lights up.
Connect sensing electrodes with the contacts of the test resistor on the top of the protection cap.
- "Test" flashes.
- "Test: ok" lights up: instrument is ready measurement.
- If "Test: ok" does not light up, clean sensing electrodes and contacts on the top of the protection cap.
Press "▲" back to measurement menu.

Measuring:
Stick the sensing electrodes into the surface of material to be measured, the moisture content shows on the main display.
The moisture contact may not be homogenous. Taking measurement at several different point is advisable.

3. Set Mode:
In set mode, user can turn on/off APO function. (APO = Auto Power Off, when APO is ON, the meter power off automatically if no operation in 10 minutes.)
When power is off, press and hold "⏻" key for 2 seconds to enter Set Mode.
3.1 APO ON/OFF: short push on "▲" key switches between ON and OFF.
3.2 Push "MODE" key to save the setting, exit APO setting mode and enter measuring mode.

※**Note:** To turn off power in Set Mode abandon the current setting and previous settings remain unchanged. If "⊏▭" indicator appeared, the setting value can works till power off but did not save to meter.
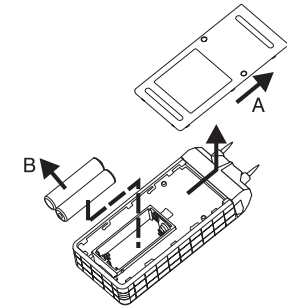
4. Hold Mode:
In Measurement Mode, short push "Mode" key to enter Hold Mode with indicator "HOLD" shows at center of LCD.
Right after entering this mode, shown in the LCD is the last measurement and the reading will not be updated with new measurement.
Push "Mode" key to exit the Hold Mode and return to Measurement Mode.

MAINTENANCE
Installing and Replacing Battery

  A. Battery Cover
  B. Battery

1. Power is supplied by 2pcs 1.5V (AAA SIZE).
2. The "⊏▭" appears on the LCD display when replacement is needed.
3. Push the Battery Cover and lift it in the direction as shown in the figure.
4. Remove the batteries from battery compartment.
5. Replace with 2 new AAA batteries with polarity as indicated on the bottom of Battery Compartment.
6. Replace the Battery Cover.

Cleaning
  Periodically wipe the case with a damp cloth and detergent, do not use abrasives or solvents.