SOIL MOISTURE METER

MC-7828SOIL

1. FEATURES

* Soil moisture is an important component of soil, it plays an important role in the growth of crops.
* This instrument uses pin measurement. By measuring the electrical conductivity between the two pins to measure the moisture content of the soil.
* The digital display gives an exact reading while a colour coded light (LED) indicates the moisture of the material (soil). This combined moisture measurement allows the user to map soil moisture and monitor changes in condition precisely and reliably.
* Use of the exclusive Micro-computer LSI circuit and crystal time base offers high accuracy measurement. The instrument automatically displays the temperature corrected moisture value.
* 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 RS232C interface.
* Can store 99 groups of measurements.

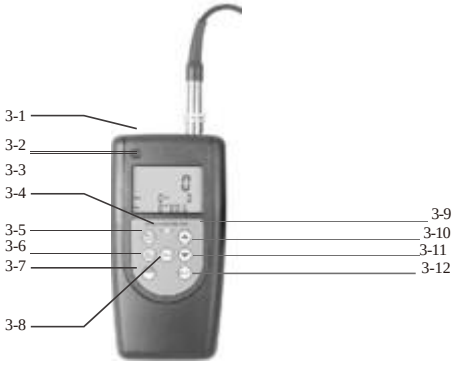
2. SPECIFICATIONS

Display 4 digits, 10 mm LCD

Colour coded LEDs indication
Green LED represents a safe, air-dry state. Yellow LED represents a borderline State. Red LED represents a damp state.
Range: average 0-80% Accuracy: ± (0.5%n+1)
PC interface: RS232C interface
The statistics available are:
Last value / Mean value / Max. value / Min. value / Number of Readings
Memory: 99 groups
Power supply: 4x1.5 AA A size (UM-4) battery
Operating conditions:Temperature: 0-50°C Humidity: below 90% RH
Dimensions:
Main unit: 140x73x35mm Sensor:
320x44x44mm Length of pin: 150mm Diameter of pin: 3mm
Distance between 2 pins: 18mm
Weight: 280g (not including batteries
Standard accessories included:
Carrying case ..... 1 pc.
Operation manual .....1 pc.

Sensor……1pc.
Optional accessory
USB Cable and software Bluetooth adapter and software

3. FRONT PANEL DESCRIPTIONS



3-1 RS232C interface
3-2 Power key
3-3 Display
3-4 Color coded LED
3-5 Measure key
3-6 Delete key
3-7 Power/Function key
3-8 Read key
3-9 Battery compartment/ Cover
3-10 Plus key
3-12 Zero/Minus key
3-13 Select key

4. MEASURING PROCEDURE

4.1 Press the Power key or the Power/Function key and release to power on meter.
4.2 Check if the material code is right by pressing and releasing the Select key. The code can be changed by pressing the Plus key or Minus key when the “cdxx” is on the display. Here “cd” is the abbreviation for “code” and “xx” is the material no. By holding the Plus key or Minus key, the material code will step into next code about every second. Release when the material code is right.
4.2.1 Code selection.
Please ascertain its material code by the standard oven-drying 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 samples of the material to be measured. The correct code is the one that is closest to those of oven-drying method. Record the code for future.
4.3 Moisture measurement
Insert pins into soil, press Measure key, moisture value displays on the screen.
4.4 Zero calibration
The zero feature enables the user to compensate for the effect of changes in both temperature and humidity. With the pins in the air and clean, the reading on the display should be `0` or `0.0`. If not, press and release the Zero key to carry out the zero calibration.

5. ALARM LIMITS

5.1 There is a coded coloured LED indicating the status of moisture. It is controlled by 2 alarm limits. The factory settings are as follows.
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 if required. Contact Frizzell first.
5.2 How to set the alarm limits
5.2.1 Press Power key and hold until 'AL1' 'AL2 ' appears on the Display. It is about 7 or 9 seconds from starting pressing Power key.
5.2.2 Values can be changed to your intended value by pressing the Plus key or Minus key. 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. 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 statistics are re-calculated and displayed.

7. STORING AND RECALLING READINGS

7.1 Readings taken are automatically saved to the memory of the meter. The memorized data can be browsed by pressing and releasing the RD key. When you enter into the browsing state ‘READ’ shows on the display.
7.2 In the browsing state, all the readings memorized can be recalled on the display by pressing the Plus key or the Minus key.
7.3 To delete a single 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 readings to delete any more.
7.4 To quit to the measurement state, just press the Zero key.

8. DELETING READINGS

8.1 To delete a reading on the display, just press the Del key whether in the measurement state marked “SV” or in the browsing state marked by “RD”. Go into the browsing state by pressing the Read key or pressing the Zero key to enter the measurement state.
8.2 To delete all the readings in the memory, just press and hold 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.

9. TRANSFERRING READINGS TO A COMPUTER

9.1 Install the RS232 software on your PC
9.2 Connect your meter to your PC using the cable.
9.3 Switch on your meter and ensure the Reading Screen is displayed.
9.4 Start the software and follow the instructions included with the software Demo.EXE

10. BATTERY REPLACEMENT

When the battery symbol appears on the display, it is time to replace the battery. Remove the batteries and install new ones paying careful attention to polarity.