PROTIMETER

Surveymaster®
Protimeter Dual-Function Moisture Meter
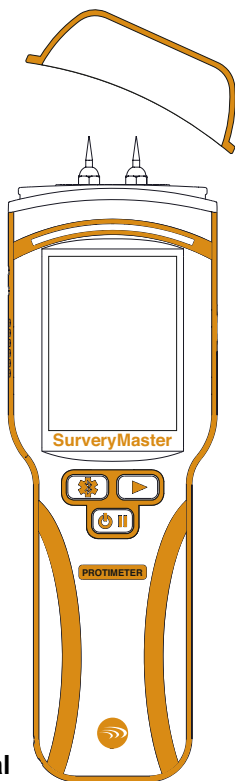
Instruction Manual

Amphenol
Advanced Sensors

1 Safety Considerations

⚠ **Caution note for the WME pins -** The Pin Moisture measurement pins are extremely sharp and the instrument should be handled with due care. The pins should be covered with the cap provided with the unit when the function is not in use.

⚠ **Calibration of unit -** The accuracy specifications of the product are generally valid for one year after the date of calibration. The product has an internal periodic calibration check to ensure the accuracy of the device and to warn customer whenever it goes out of calibration. Refer pin mode calibration check and pinless mode calibration for details.

⚠ Only operate the measuring instrument properly, for its intended purpose and within the parameters specified in the technical data. Readings from moisture meters are not definitive but are used to help a professional make informed judgment to the material's moisture condition. Conductive material such as salts, carbon and metal can give false positive readings.

⚠ if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired

2 Pin (WME) Mode Operation

In Measure mode, the Surveymaster uses electrical conductance principles to measure the moisture level of the material between two electrodes. The instrument has integral pin electrodes that may be firmly pressed onto surfaces, or it may be used with various auxiliary moisture probes, including Heavy Duty Pin Probe, Deep Wall Probes, a Hammer Electrode (optional) or an EIFS probe (optional).

Remove the needle cap from the top of the Surveymaster and press ⏻ to switch it on.

Check which operational mode the instrument is in by looking at the letters in digital display %WME indicates the Surveymaster is in Measure mode, REL))) indicates the meter is in Search mode. If the instrument is in Search mode, press ▶ to switch to Measure mode. %WME will appear in the display.Push the pins firmly onto the surface of the material at the required point of measurement.Read the moisture level value from the display and note the moisture condition of the material from the color coded LED scale.

Note: *Measurements taken in wood are actual % moisture content values, whereas readings taken in material other than wood are % Wood Moisture Equivalent (%WME) values - see Pin Mode Interpretation for more details.*

3   Using Auxiliary Moisture Probes in Pin (%WME) Mode

The Surveymaster is supplied with a Heavy Duty Moisture Probe and lead for taking measurements at points that cannot be reached easily with the integral electrode pins. To use, connect the Moisture Probe jack plug to the socket on the right side of the instrument and push the Probe pins onto the surface at the chosen point of measurement.

Additional accessories can be purchased, including deep wall probes.

The Protimeter Hammer Electrode can also be used to make measurements deep into hard and softwoods.

Note: *Deep Wall Probes may be used to investigate high readings that may have been obtained in Search mode. Deep Wall Probes may be used to determine the moisture profile through a structure by increasing the depth of the clearance holes incrementally.*

4 Pin (%WME) Mode Interpretation

Measure mode readings are precise and specific to the area of contact between the electrode tips. Actual percent moisture content (%mc) values are measured in wood products. Wood Moisture Equivalent (WME) values are measured in materials other than wood.

The WME measurement is the theoretical %mc value that would be attained by a piece of wood in moisture equilibrium with the material under investigation at the point of measurement. As the critical %mc levels of wood are known, WME values may be used directly to establish if the material is in a dry, borderline or damp condition as indicated by the color coded LED scale.

5 Instrument Calibration Check (pin mode)

An internal calibration check is provided in the device for the user to check the Measure mode calibration. Press and hold ⏻ key and ▶ key together while in %WME mode to do a calibration check. The device will let the user know if the unit passes or fails the calibration check.

Note: *Ensure that no auxiliary probes are connected to the device Before a calibration check is run. Connecting any probe to the right side Jack may cause interference in the calibration check value.*

6 Search Mode (REL)

When used in Search mode (REL), the Surveymaster is a moisture detector. Search mode readings give, in relative terms, the moisture condition up to 19mm / 3/4" beneath the surface of materials. This mode of operation is ideal for making rapid surveys of solid walls and floors and to pinpoint areas of concern that may justify a more extensive investigation. The Search mode may also be used as an alternative to the Measure mode when it is impractical or undesirable to push electrode pins into surfaces. Consider, for example, taking moisture readings behind ceramic tiles in shower cubicles or in walls covered by quality wallpapers where pinholes would not be acceptable. Surface moisture (such as condensation on an otherwise dry wall) has little effect on Search mode readings. Conductors (other than water) within the material may cause high Search mode readings. Make sure the flat surface on the back of the meter is in full contact with the material to be tested. It is recommended that users place the meter onto different areas to measure and do not slide the meter across surfaces.

Note: *Sliding the meter can cause premature wear to the back of the meter.*

7 REL mode calibration.

It is advised to do user calibration of the device in REL mode before a study is started. Refer the operations section for details.

8 Reference Mode

In both Pin and Search mode, Protimeter's patented feature "Reference Mode" can be used. Measure the material until the meter's reading is stable then press ▶ for 2 seconds. This will store the reading until the mode changes of the meter turns off. Now all reading taken after will be displayed as normal, but below you will see a second reading that shows you if the material is measured above or below the original reading. Reference mode can be useful when trying to establish what materials are above or below a point of reference or dry standard. See page 7 for further information.

9   Operating Surveymaster
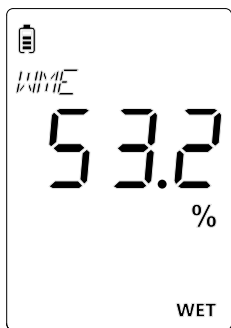
Switch On:

Press the ⏻ ON/OFF button.

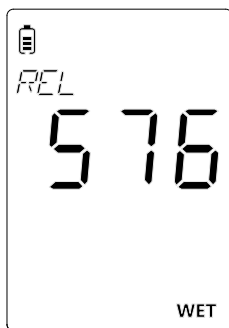The unit turns on, with the LCD displaying all the segments and sweeping the LED bar graph.

Mode Change:

Press ▶ mode button to change to the REL (Search) mode from WME (Pin), and vice versa.
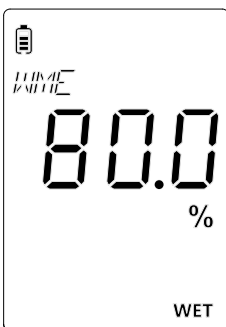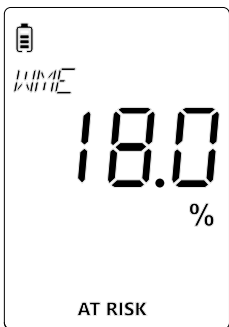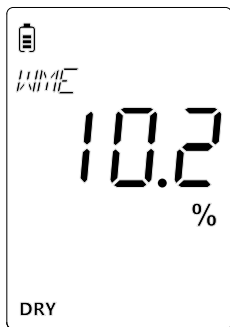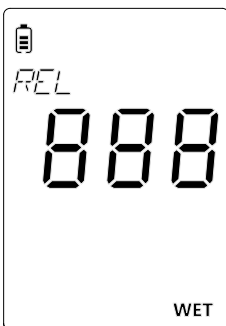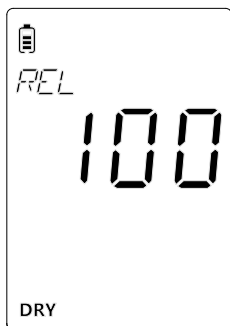
WME (pin)	REL (Search)

Measurements:

In both modes, the numeric measurement and color LED will be shown as well as the "DRY" (green) or "AT RISK" (yellow) or "WET" (red), based on the measurement shown.

7-16.9 DRY (Green), 17-19.9 AT RISK (Yellow), 20-99.9 WET (Red)

🔋	🔋	🔋
𝐻𝐼𝑀𝐸	𝐻𝐼𝑀𝐸	𝐻𝐼𝑀𝐸
10.2	18.0	80.0
%	%	%
DRY	AT RISK	WET

70-169 DRY (Green), 170-199 AT RISK (Yellow), 200-999 WET (Red)

🔋	🔋	🔋
REL	REL	REL
100	188	888
DRY	AT RISK	WET

Reference Mode of Measurement:

Note: *For application information, see the section "Using the Pin (WME) Mode."*

In either mode, take the first measurement which needs to be taken as reference. This is useful when establishing a dry standard in the building and comparing other readings against this dry standard. While the first reading is displayed on the screen, press and hold the ▶ button for 2 seconds to enter the Reference Mode. The display will be similar to the one shown.
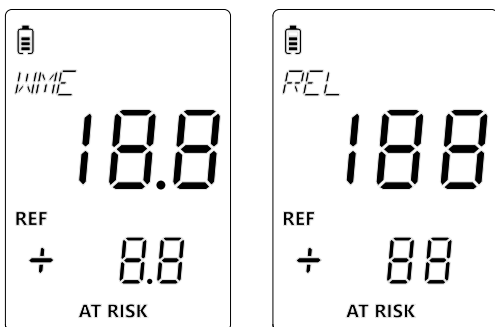
To return to the normal measurement mode, press ▶ again.

Settings:

Press the ✴ button to enter in to settings. Press again to return to measurement

The device enters in to language settings as a first setup screen.

Setting up language:

The first screen to appear in Settings is Language. User will see the last set language on the screen as below.
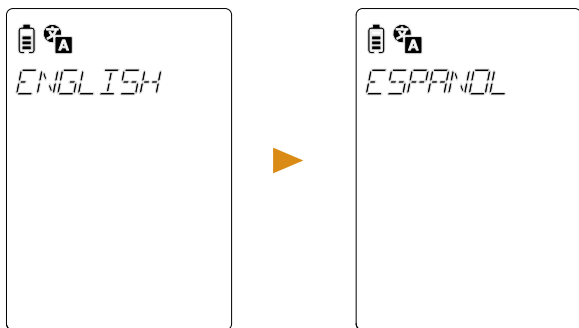
press ▶ to browse through the list of languages available. When the desired language is seen on the display choose it by pressing ⏻❚❚ key. This will set the language you selected and will move on to the next setting screen.
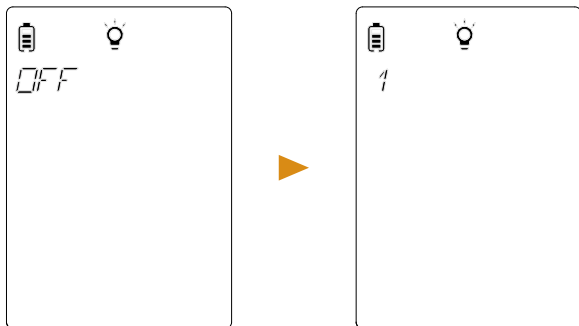
Buzzer ON/OFF Settings:

Pressing ⏻❚❚ key from the language settings will move on to Buzzer setting.
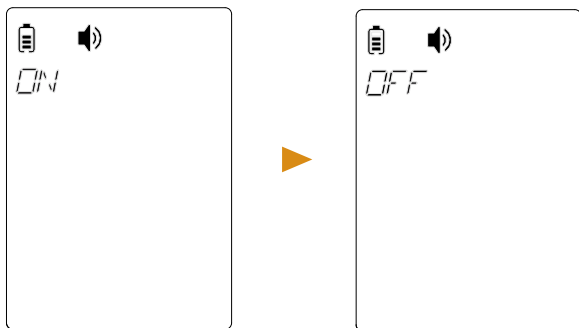
press ▶ to toggle between on and off. Choose and go to the next setting by pressing ⏻❚❚.

Brightness settings (Back light):

Pressing ⏻❙❙ key from the buzzer settings will move on to brightness settings.


press ▶ to change the back light from off to 10 levels.

When the desired brightness is set on the display save and move by pressing ⏻❙❙ key.

Note: Battery life is effected by the brightness setting. To maximize battery life keep on the minimum setting.

Auto Off Time Settings:

When Auto Off is set, the unit will shut down automatically at a specified time between 1 and 10 minutes, if there is no key press detected within the set time.
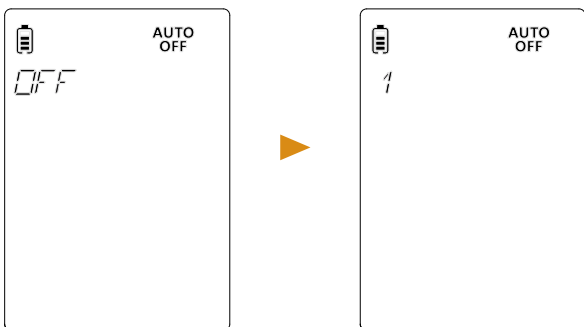
For example, if the Auto Off time is set as 1, then the unit will automatically shut down after a minute when no key is pressed.

If the auto off time is set to be "Off", then the unit will not automatically turn off. A user must manually turn it off by pressing and holding the ⏻ button for 5 sec.

Turn off time can be changed from Off till 10 minutes by pressing ▶ key. Pressing ⏻‖ key will move to the next screen

Note: Preserve battery life by lowering the auto turn off time to a minimum on time.

DRY, AT RISK and WET Settings:
Pressing ⏻‖ key from auto off setting will move on to DRY, AT RISK and WET setting screen.

This screen sets whether the indication on the display needs to be switched ON or OFF. When it is ON, the moisture condition will be displayed on the screen. When it is OFF, no indication is displayed on screen.
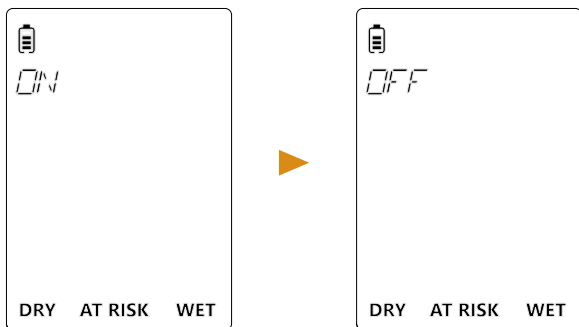
Pressing ▶ toggles the state from Off to On and vice versa.
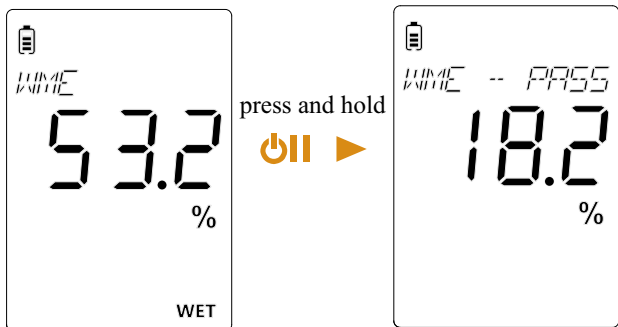
Turning Bluetooth On/Off:

To turn the bluetooth on or off at any point of time from the measurement screen, press and hold ❄ key
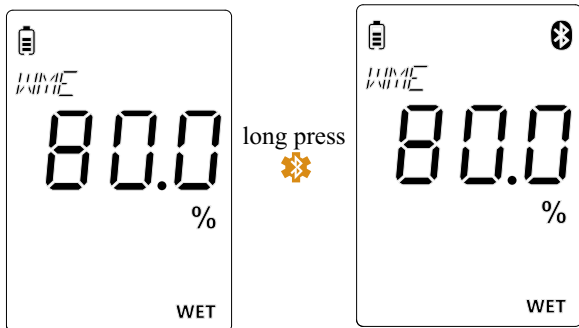
Pin mode calibration check:

When the device is in pin mode measurement (WME mode) press and hold ⏻❚❚ and ▶ keys.

Device will check the calibration internally and display the reading along with the pass fail result.

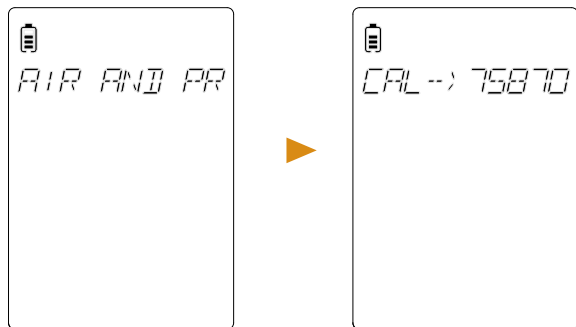press ▶ key to exit the calibration check.

REL mode calibration:

When the device is in REL mode (search mode) press and hold
⏻❚❚ and ▶ keys.

press and hold
⏻❚❚ ▶

A scrolling text appears mentioning "hold in air and press right"
hold the unit in air, away from any other object and then press
▶ key to calibrate the device for REL mode.

unit calibrates the REL mode considering the environmental
offset and displays the value read for the situation.

▶

press ▶ key to exit the calibration.

Battery Status:

Battery status is indicated in 5 levels. 🔋 symbol can be seen at the left top corner of the screen. Whenever the battery is low the symbol will blink (without any block inside). When the battery is low its better to replace them soon. The unit will continue to perform in battery condition within the specified accuracy, and turns off when the battery reaches the limit.
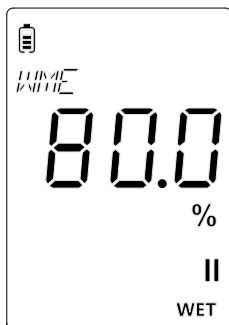

| 100% | 80% | 60% | 40% | 20% |

Holding / Freezing the Reading:

While measuring, if the reading needs to be frozen for any

observation, press ⏻ during measurement. A symbol ‖ will be displayed on the screen.

9 Battery Replacement

A 2700mAh battery will last continuously for more than 20 hours for a Surveymaster in operation. A Battery Low indication on the screen indicates that the battery needs to be changed in a short time.

Remove the battery lid to open the battery compartment.

Remove the batteries, and replace. Care must be taken to ensure that the polarity is correct as below. Place the battery inside the compartment.
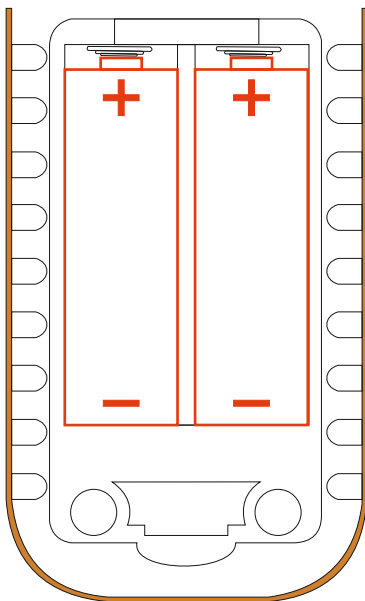
10 Specification

Display(LCD).. 35 X 50 mm
                 With backlight(10 brightness level)
Battery..................................... 3V(2 x AA) 2700mAh

Temperature
Operating.. 0°C to 50°C
Storage.. -40°C to 85°C
Operating Humidity............................. 0 to 90% RH
Operating Altitude..................................... 2000m
Safety.. Pollution degree 4
Size....................................... 19.5cm x 6.5cm x 5cm
Gross Weight... ~270g
Measurement Specification.....................................
Moisture measurement:
    For integrated and remote pin probes:
    Strong and reliable integrated pins, with a cap to protect
    Pin measurement range (% MC in wood/%WME) -
    6 to 100% (readings over 30% are relative)

Non-Invasive moisture measurement:
    Measurement depth - up to 3/4" (19mm) deep,
    60 to 999, no effect on reading by surface moisture

Regulatory Compliance

CE, RoHS, ETL, UKCA, FCC

Amphenol
Advanced Sensors