Moisture with Thermo-Hygrometer

MEET® **Technology**

☐ **MS-98TG** Pin + Surface type sensor

☐ **MS-98TGS** Pin + Penetrate type sensor

CE
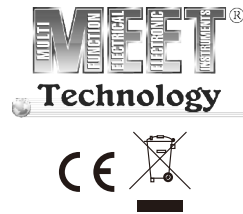
OPERATION MANUAL

1. Introduction

The moisture meter is designed for use in wide applications such as :
- For locating water leaks behind walls, above ceilings and below floors.
- For wood working, measure moisture content before finishing, painting processing.
- For textile industries, regular check moisture content of fabrics and leathers, quality check to prevent mold.
- For printing industries, check moisture content of paper before printing.

2. Specifications
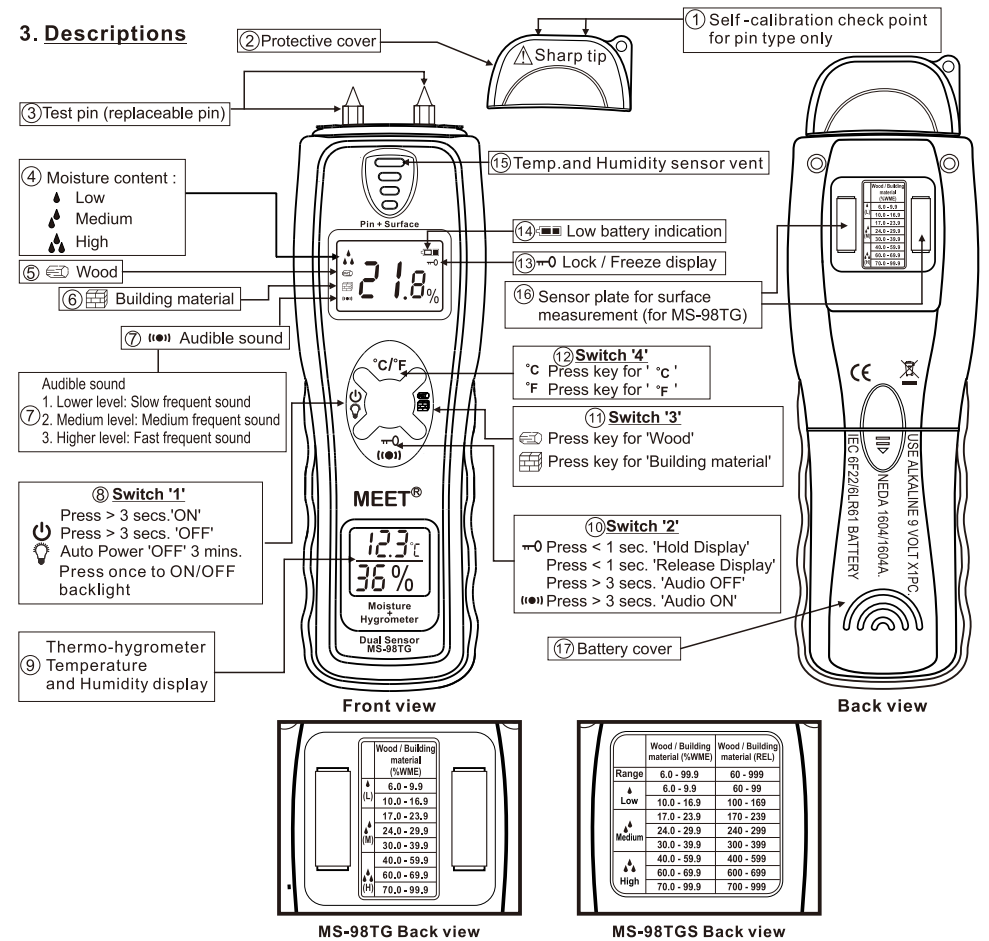
- Operating voltage : 1 x 9V (6F22 / 6LR61 / 1604)
- Operating current : < 40mA max.
- Low battery indication : < 7.5V, an icon '▭◼' display
- Extreme low battery warning with auto power Off (20 secs.) when below 5.5V
- Auto power off : within 3 mins. in inactive mode
- Backlight (top display only)
- Operating temperature: 0°C~50°C (32°F~122°F)
- Operating humidity: 80% RH max.
- Moisture measuring range:

	MS-98TG	MS-98TGS
Sensor type	Pin and surface	Pin and penetrate
% WME reading for wood (Pin)	6.0~99.9%	6.0~99.9%
% WME reading for Building material (Pin)	6.0~99.9%	6.0~99.9%
REL reading for wood (Penetrate)		60~999
REL reading for Building material (Penetrate)		60~999

- Accuracy : a) Pin Probe mode: ±(3% rdg + 5 digits)
           b) Pinless (penetrate) mode: Relative reading (REL)
- Resolution : 0.1%
- Non-destructive / pinless (penetrate) measuring depth : >20mm (for MS-98TGS)

- Thermo-Hygrometer:

	Temperature	Humidity
Measuring range	-50°C~70°C (-58°F ~158°F)	20%~95%(RH)
Resolution	0.1°C / (0.1°F)	1%(RH)
Accuracy	-50°C~0°C (±2°C) / 0 °C ~70°C(±1°C)	±5% RH@25°C
Over range display	<-50°C 'Lo', >77°C 'Hi'	<20% 'Lo', >95% 'Hi'
Reading response time (approx.)	3 secs.	3 secs.

3. Descriptions

Front view

Back view

① Self -calibration check point for pin type only
② Protective cover
⚠ Sharp tip
③ Test pin (replaceable pin)
④ Moisture content :
  💧 Low
  💧 Medium
  💧 High
⑤ ▭ Wood
⑥ ▦ Building material
⑦ 🔊 Audible sound
⑮ Temp.and Humidity sensor vent
⑭ ▭◼ Low battery indication
⑬ 🔒0 Lock / Freeze display
⑯ Sensor plate for surface measurement (for MS-98TG)

Audible sound
1. Lower level: Slow frequent sound
⑦ 2. Medium level: Medium frequent sound
3. Higher level: Fast frequent sound

⑫ **Switch '4'**
°C Press key for ' °C '
°F Press key for ' °F '

⑪ **Switch '3'**
▭ Press key for 'Wood'
▦ Press key for 'Building material'

⑧ **Switch '1'**
⏻ Press > 3 secs.'ON'
  Press > 3 secs. 'OFF'
💡 Auto Power 'OFF' 3 mins.
  Press once to ON/OFF backlight

⑩ **Switch '2'**
🔒0 Press < 1 sec. 'Hold Display'
  Press < 1 sec. 'Release Display'
  Press > 3 secs. 'Audio OFF'
🔊 Press > 3 secs. 'Audio ON'

Thermo-hygrometer
⑨ Temperature and Humidity display

⑰ Battery cover

MS-98TG Back view

Wood / Building material (%WME)
6.0 - 9.9
10.0 - 16.9
17.0 - 23.9
24.0 - 29.9
30.0 - 39.9
40.0 - 59.9
60.0 - 69.9
70.0 - 99.9

MS-98TGS Back view

	Range	Wood / Building material (%WME)	Wood / Building material (REL)
Range		6.0 - 99.9	60 - 999
Low		6.0 - 9.9	60 - 99
		10.0 - 16.9	100 - 169
		17.0 - 23.9	170 - 239
Medium		24.0 - 29.9	240 - 299
		30.0 - 39.9	300 - 399
		40.0 - 59.9	400 - 599
High		60.0 - 69.9	600 - 699
		70.0 - 99.9	700 - 999

4. How to replace battery

Replace 9V alkaline block type battery when low battery warning ' ▭◼ ' indicates on LCD.
Remove the battery cover and replace a fresh battery.
To avoid chemical leakage from the battery, remove the battery if you are intended not to use the meter in short time.

5. User Set-Up Options table (for MS-98TGS)

To enter the set-up options please follow :
- With the meter switched OFF, press and hold both front panel button (Power and Hold buttons ⑧ + ⑩) simultaneously for two seconds. The display should now read "0-0" or "0-1" where left digit "0" is the Option and right digit is the Setting.
- Use the Power button ⑧ to scroll through the Options
- Use the Hold button ⑩ to change the Setting

Option	Settings	Set up information
0 (Set-up)	0	Factory default (0-0, 1-1, 2-0, 3-1)
	1	Start to Set-up Options
1 (Buzzer)	0	Beeper is switched OFF
	1	Beeper beeps when user switches button
	2	Beeper beeps faster the higher moisture level
2 (Auto power off) (APO)	0	Disables APO function
	1	Set APO interval to 1 minute
	2	Set APO interval to 2 minute
	3	Set APO interval to 3 minute

6. Calibration check (For pin type and wood mode only)

To check the calibration, remove the protective cap from the top of the meter, take extra care not to hurt yourself with the two sharp pins beneath it. Then flip the cap and insert the calibration point two holes over the meter's two test pins.
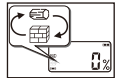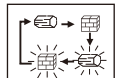The display should read within 18.2%, +/-1.0% rdg. in wood measurement mode.
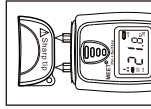
HOW TO USE

⚠ **CAUTION:** Handle with care when removing protective cover !

1. Remove the 'Protective Cover' from the front side.
2. Press and hold the switch 1 '⏻' ⑧ until LC displays and buzzer sounds.

Select wood '▱' or building material '▦' by pressing switch 3 '▱' ⑪.

(For MS-98TGS)
Blinking ☼ (wood) or ☀ (building material) icon indicates pinless (penetrate) mode.
Note: Hold the meter in an open space and free from any object and then toggle the switch '3' ⑪
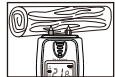
Insert the 'test pins' into the wood, read the values on LCD and also buzzer sounds with different tone level.

Press once (switch 2 '⟲') ⑩ to freeze the display reading when measuring in a dark place or difficult to see the reading, '⟲' icon display on LCD.
Another press (switch 2 '⟲') ⑩ to release the freeze display.

Press (> 3 secs.) switch 2 '⟲' ⑩ to select audible sound ON or OFF (silent).

How to measure moisture by Pinless / Penetrate sensor area (for MS-98TGS)
- After power ON, hold the meter in an open air space and free from any object, and then toggle the '▱' button ⑪ to 'blinking' icon of wood '☼' or building material '☀' as shown. (Calibration of the meter is also completed).
- Hold the meter and place the sensor on to the object.

Note : Place the sensor in flat on the object surface when measuring 'pinless / penetrate' mode.
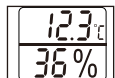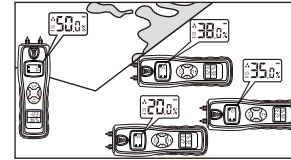
Thermo-hygrometer Display
LCD at the bottom shows the ambient Temp. and Humidity.
Conversion of '°C' to '°F' is by pressing once switch 4 '°C/°F' ⑫
- Hold the meter and place the sensor on to the object.

Note : Humidity approximately below 20% indicates 'Lo%' and above 95% indicates 'Hi%'.

TYPICAL EXAMPLE

Tracing Water Leakage
Place the 'Test Pins' on the surface such as concrete, wood, plaster, dry walls or ceiling. Notice the reading on LC display, continuously take measurement at different location approaching to 'higher' readings. Leakage located when the reading remains at 'highest value'.
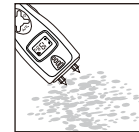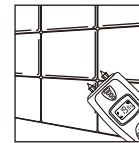
Chemical / Pharmaceutical
Monitor the dryness or conductivity of the powder.
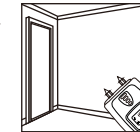
Painting
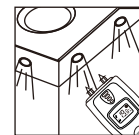Check dryness of wall prior to painting or varnishing.

Tiling
Check dryness prior tiling.

Timber / Furniture
Check moisture of Timber.
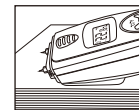Dampness check of wood prior to painting/varnishing or processing.

Wallpaper
Dampness check of dry / plaster walls prior to wall papering.
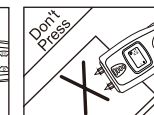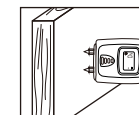
Agriculture / Gardening
Monitoring water contents of soil.

Flat surface measurement
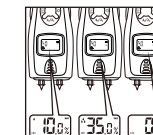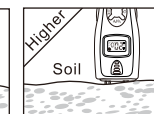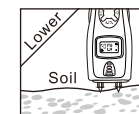Detect moisture content of flat surface (for MS-98TG)

IMPORTANT NOTES

Gently place 'Test Pins' on the surface, do not use force; bang or pressure on hard surface.

Be careful of your hand when opening the 'Protective Cover'.

In some case, various value shows in different location, because it depends upon the density or moisture contents spread unequally.

Lower reading shows when the 'tip' of the 'Test Pins' contacts on surface and higher reading shows when the 'Test Pins' are placed 'inside' the soil.
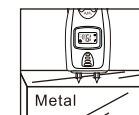
Maximum reading shows '99.9%', when the surface / object is metallic or conductive material.

Always keep the 'Test Pins' clean and replace the protective cover when not in use.

- Features and specifications are subject to change without prior notice.

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