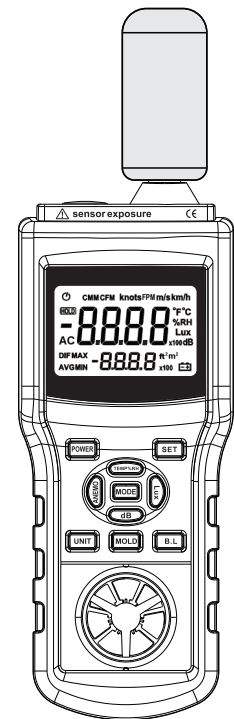


Multi-functions Environment Tester

User's Manual



Multi-functions Environment Tester

1. Safety Information

Read the following safety information carefully before attempting to operate or service the meter. Use the meter only as specified in this manual, otherwise, the protection provided by the meter may be impaired. With proper use and care, your digital meter will provide you satisfactory service for years.

1.1 Preliminary

- 1.1.1 When the meter is delivered, check that it has not been damaged in transit.
- 1.1.2 When poor condition under harsh preservation or shipping conditions caused, inspect and confirm this meter without delay.

1.2 During use

- 1.2.1 Operate the meter under the condition of stated temperature and humidity.
- 1.2.2 If any faults or abnormalities are observed, the meter can not be used any more and it has to be checked out.
- 1.2.3 Please do not store or use meter in areas exposed to direct sunlight, high temperature, humidity or condensation.
- 1.2.4 Don't touch or manipulate the sensor.
- 1.2.5 Don't expose the sensor to direct light, this causes a false reading.
- 1.2.6 Don't expose the sensor to static electricity.
- 1.2.7 Never dip the sensor directly in the water or impregnant.

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1.3 Symbols

- ☑ Comply with EMC
- ⚠ Important safety information.

1.4 Maintenance

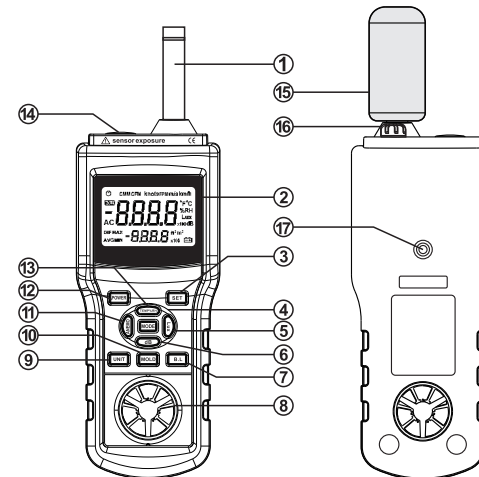
- 1.4.1 Repairs or servicing not covered in this manual should only be performed by qualified personnel.
- 1.4.2 If it exists dust on the sensor, use clean air to blow it away or use alcohol to scrub it away lightly. Do not use other chemical impregnant for scrubbing.
- 1.4.3 Do not use abrasives or solvents on the meter, use a damp cloth and mild detergent only.
- 1.4.4 Always set the power switch to the OFF position when the meter is not in use.
- 1.4.5 If the meter is to be stored for a long period of time, the batteries should be removed to prevent damage to the unit.

2. Description

- This meter is a digital Multifunction Environment Meters meter which combined the function of Sound Level, luminometer, Relative Humidity Meter, Temperature Meter and anemometer.
- This meter is a portable professional measuring instrument with large LCD and back light for easily reading.
- This meter has function of data hold.
- This meter has function of auto change range.
- This meter has function for measurement of MAX, MIN, AVG and DIF (MIN-MAX) value.
- This meter has function of auto/manual power off.
- Low battery indication is provided.

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2.1 Names of components



- | | |
|------------------------------------|--|
| (1) microphone | (10) "HOLD" -data hold button |
| (2) LCD display | (11) "ANEMO" -anemo button |
| (3) "SET" -setting button | (12) "POWER" -power on/off |
| (4) "MODE" -mode button | (13) "TEMP/%RH" - Temperature/ Humidity button |
| (5) "LUX" -illuminance button | (14) illuminance Sensor |
| (6) "dB" -Sound Level Meter button | (15) windbreak |
| (7) "B.L" -Back light button | (16) Temperature/ Humidity Sensor |
| (8) Airflow Sensor | (17) Tripod connector |
| (9) "UNIT" -units button | |

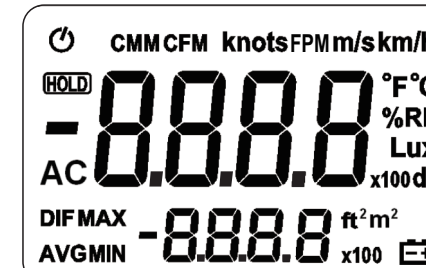
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2.2 Button elucidation

- POWER Button
This Button is used to the switch of power.
- B.L Button
This button is used to the switch of back light.
- HOLD Button
This Button is used to the switch of data hold.
- MODE Button
This button is used to the switch of MAX, MIN, AVG and DIF (MAX-MIN) value measure
- UNIT Button
This Button is used to transform the units of the measurement.
- SET Button
This Button is used to setting the parameter of the meter.
- TEMP/%RH Button
This Button is used to the switch of Temperature and relative Humidity value measure.
- Lux Button
This Button is used to the switch of illuminance value measure.
- ANEMO Button
This Button is used to the switch of wind speed or airflow value measure.
- dB Button
This Button is used to the switch of sound level value measure.

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2.3 LCD illustration




- °C, °F Centigrade, Fahrenheit indication.
- %RH Relative Humidity indication.
- m/s, km/h, FPM, Knots The unit of wind speed indication.
- CMM, CFM The unit of airflow indication.
- ft², m² The unit of area indication.
- X10, X100 The multiplier indication of airflow and illuminance.
- Lux The unit of illuminance indication.
- dB The unit of Sound level indication.
- A, C A-Weighting, C-weighting indication.
- MAX The Maximum value is displayed.
- MIN The Minimum value is displayed.
- ACG The average value is displayed.
- DIF The MAX-MIN value is displayed.
- ☑ This indicates auto power off is enabled.
- HOLD This indicates that the display data is being held.
- 🔋 The battery is not sufficient for proper operation.

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3. Specifications

3.1 General specification

- 3.1.1 Numerical Display: 4 digital Liquid Crystal Display.
- 3.1.2 Response Time: about 2 times/second.
- 3.1.3 Operating Environment:
-10°C~60°C(14°F~140°F)
- 3.1.4 Storage Environment:
-10°C~50°C(14°F~122°F)
- 3.1.5 Power Requirements: Battery- One 9V battery 006p or IEC 6F22 or NEDA1604
- 3.1.6 Low Battery Indication:  displayed
- 3.1.7 Dimension: Meter-280(L)x 89(W)x 50(H)mm;
- 3.1.8 Weight: Approx.430g

3.2 Electrical specifications

3.2.1 Temperature

| Range | Resolution | Accuracy |
|------------|------------|----------|
| -10°C~60°C | 0.1°C | ±1.5°C |
| 14°F~140°F | 0.1°F | ±2.7°F |

3.2.2 Relative Humidity

| Range | Resolution | Accuracy |
|---------------|------------|------------|
| 20~80%RH | 0.1%RH | ±3%RH@25°C |
| (<20, >80)%RH | 0.1%RH | ±5%RH@25°C |

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3.2.3 Sound level(dB)

| Range | Resolution | Accuracy |
|--------------|------------|----------|
| 30~130dB (A) | 0.1dB | ±1.5dB |
| 35~130dB (C) | 0.1dB | ±1.5dB |

Test condition: 94dB 1kHz sine wave
Response frequency: 100 ~ 8000Hz

3.2.4 Illuminance(Lux)

| Range | Resolution | Accuracy |
|-------------|------------|--|
| 0~2000Lux | 1Lux | ±(5.0% of rdg+10digits) at color temp. 2850K calibrated to standard incandescent lamp at color temperature 2856 k |
| X10(20000) | 10Lux | |
| X100(50000) | 100Lux | |

3.2.5 wind speed

| Range | Resolution | Accuracy |
|---------------|------------|----------------------|
| 0.5~20m/s | 0.1m/s | ±(3%of rdg+10digits) |
| 1.8~72km/h | 0.1km/h | ±(3%of rdg+10digits) |
| 100~4000FPM | 0.1ft/s | ±(3%of rdg+10digits) |
| 0.9~38.9knots | 0.1knots | ±(3%of rdg+10digits) |

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3.2.6 Airflow


| Range | Resolution | Accuracy |
|-------------|-----------------------|------------------------|
| 0~999900CMM | ±(3% of rdg+10digits) | 0~999.9m ² |
| 0~999900CFM | ±(3% of rdg+10digits) | 0~999.9ft ² |

4. Operating Instruction

4.1 Power-up

Press the “POWER” button to turn the meter ON or OFF.

4.2 Auto power off

By default, when the meter is powered on, it is under auto power off mode, The meter will power itself off after 20 minutes if no key operation. One may press and hold "POWER" button and then press “SET” button that auto power off is disabled and the  will not show up.

4.3 Read hold

The user may hold the present reading and keep it on the display by pressing the "HOLD" button. When the held data is no longer needed, one may release the data-hold operation by pressing "HOLD" button again.






4.4 Back light

If the light is dark to make the reading difficult when measuring, you can press “B.L” button to open the back light which will last for 10 sec. You can close it up at any time once press “B.L” button again.

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Note:

- LED is the main source of back light. Its working current is large, often use back light will shorten the battery life, you'd better not to use the back light so frequently unless it's necessary.
- When the battery voltage is less than 7V, it will show . But if you use back light at the same time, maybe  will come up even if the battery voltage is more than 7V, because the working current is higher and the voltage will decline. (When  shows, the accuracy of the measurement can not be assured.) You need not replace the battery. When you use normally (back light is not using),  will not show up. You need replace it till  show again.

4.5 AVG/MAX/MIN/DIF measurement

When One press the "MODE" button, you can select AVG/MAX/MIN/DIF(MAX-MIN) value to measure.

4.6 Temperature measurement

For measurement, place the sensor probe in the tested environment. Press the button “TEMP/%RH” to measure at 20 minute later. When the meter was first power on, the default scale setting is set at Celsius°C scale. The user may change it to Fahrenheit°F by pressing “UNIT” button and vice versa to Celsius by pressing “UNIT” button again.

4.7 Humidity measurement

For measurement, place the sensor probe in the tested environment. When Press the “TEMP/%RH” two times at 20 minute later, the meter will enter Humidity measurement mode, the response time of the sensor is 5 second.

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4.8 Sound level (dB) measurement

Move the sensor in front of the meter to the sound source. Press the “dB” button to measure, and than the LCD display will show the Sound level at the meter. When the meter was first power on, the default scale setting is set at A-Weighting scale. The user may change it to C-Weighting by pressing “UNIT” button and vice versa A-Weighting by pressing “UNIT” button again.

Note:

Strong wind striking the microphone call cause misreading for measurement in windy locations, a windscreen should be used in front of microphone.

4.9 Illuminance(Lux) measurement

Move the sensor in front of the meter to light source in a horizontal position. Press the “Lux” button to measure, and than the LCD display will show the illuminance at the meter.

4.10 Wind speed measurement

For measurement, place the sensor probe of anemometer in the tested environment and to be sure the fan is in a upright position to the air current and than press the “ANEMO” button to measure. When the meter was first power on, the default scale setting is set at m/s scale. The user may change it to km/h,FPM and knots by pressing “UNIT” button.

4.11 Air flow measurement

Before measurement, you must set the area of the air current at first, the default value is 1.0m², press “SET” button enter area setting, one may press“UNIT” button to select which digit of the area to

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change and press “HOLD” button and “B.L” button to change the selection to be a suitability value that you need, at last you may press “SET” button to save the setting. The next place the sensor probe of anemometer in the tested environment and to be sure the fan is in a upright position face to the air current and than press the “ANEMO” button to measure. When the meter was first power on, the default units setting is set at CMM scale. The user may change it to CFM by pressing “UNIT” button, and than setting the area again.

Note:

While measuring the Wind speed and the Air flow, Avoid direct sunlight.

4.12 Battery replacement

If the sign  appears on the LCD display, it indicates that the battery should be replaced. Turn the unit off. Remove the battery cover. Replace the exhausted battery with a new one. Put the battery cover as its origin.

4.13 Use the tripod connector

If needed, the meter can be fixed on the tripod. The meter also can be hanged up for use.

5. Accessories

- | | |
|-------------------------|-----------|
| (1) Battery: 9V 6F22 | One piece |
| (2) Windbreak | One piece |
| (3) Operating Manual | One piece |
| (4) Sensor Probe Holder | One piece |



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