

EM-1000

Digital Multi-Function Environment Meter

Thank you for purchasing our Digital Multi-Function Environment Meter. Please read this instruction manual carefully before using to ensure the correct usage of this device. Please keep this instruction manual for future reference.



Please note that misuse of this device may lead to injury to the user or damage to the device. Please observe all safety precautions and warnings in this instruction manual.

Customer Service



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Safety Precautions

For safe usage of this device, please observe all statements regarding precautions and warnings in this instruction manual.

ATTENTION

Operation

- Do not use this device near machines that emit strong electromagnetic fields or objects that store static electricity.
- Do not drop or subject this device to strong impact.
- Do not use or store this device where it will be exposed to water or in places with wet conditions.
- Do not use or store this device where it can be exposed to direct sunlight, dust, high temperature and high humidity.
- See the battery case markings to ensure that the battery is properly installed.
- For accurate measurements, do not subject this device in measuring sudden change of temperatures.
- Remove the battery when the device will not be used for a long period of time.
- Do not attempt to disassemble or modify this device.

1. Operation Procedures

a. Humidity & Ambient Temperature Measurement

- 1.) Press the "ON" button to turn on the meter.
- 2.) Select the Relative Humidity function by pressing "Function Button".
- 3.) The LCD display will show the current measurement indicated by the unit of measurement symbol "%RH" and "°C".
 (The upper display shows the Humidity measurement, lower display shows Temperature measurement.)
- 4.) Press the "°C/°F Button" to select °C/°F unit.

b. Air Velocity & Ambient Temperature Measurement

- 1.) Press the "ON" button to turn on the meter.
- 2.) Select the Anemometer function by pressing "Function Button".
- 3.) Press the "Unit/Zero Button" to select unit of Air Velocity.
- 4.) Press the "°C/°F Button" to select °C/°F unit.
 (The upper display shows the Air Velocity measurement, lower display shows Temperature measurement.)
- 5.) Face the "Anemometer Sensor" to the measuring airflow. Get reading when display stabilizes.

c. Air Flow (CFM, CMM) Measurement

- 1.) Press the "ON" button to turn on the meter.
- 2.) Select the Air Flow function by pressing "Function Button".
- 3.) Press the "CFM/CMM Button" to select unit.
- 4.) Press the "Area-Set Button" to select area size.
- 5.) Press each button to set the desired area size.
 ◀ Move the cursor to the next digit
 ▲ Increase the selected digit.
 ▼ Decrease the selected digit.
- 6.) Press the "Enter Button" to save the value.
- 7.) Press the "ESC button" to return to normal mode.
 If the "ESC button" is pressed before pressing "Enter Button", the display returns to normal mode without saving the value.
- 8.) Face the "Anemometer Sensor" to the measuring airflow. Get reading when display stabilizes.

For the CMM measurement, the area size is "meter square", the lower display will show "m-2".
 The area setting size is from 0.001 to 30.000 meter square.

For the CFM measurement, the area size is "feet square", the lower display will show "F-2".
 The area setting size is from 0.01 to 322.92 feet square.

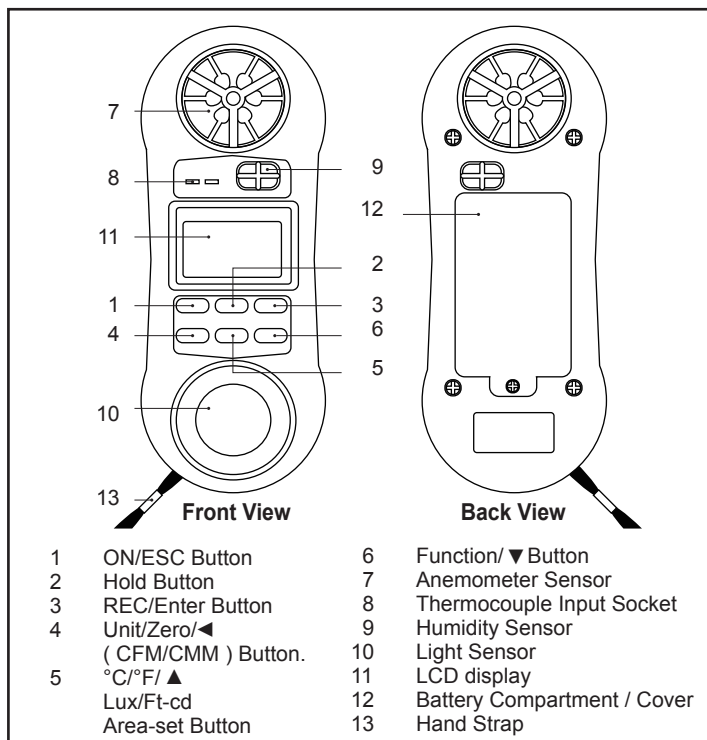
d. Temperature Measurement (K type Thermocouple probe)

- 1.) Insert the thermocouple plug into the input terminal.
- 2.) Press the "ON" button to turn on the meter.
- 3.) Select the Temperature function by pressing "Function Button".
- 4.) Engage the thermocouple probe to the object to be measured.
- 5.) After the display stabilize, take the reading of the temperature.
- 6.) Press the "°C/°F Button" to select °C/°F unit.

e. Light Measurement

- 1.) Press the "ON" button to turn on the meter.
- 2.) Select the Light meter function by pressing "Function Button".
- 3.) Press the "Lux/Ft-cd Button" to select measuring unit "Lux" or "Ft-cd".
- 4.) Face the "Light Sensor" to the light source. Get reading when display stabilizes.
 The light display digits are oriented 180° from the other function displays for easy exposure and output reading of the light sensor.

2. Parts



3. Hold Function

- 1.) While measuring, press the "HOLD button" to hold the last measured value on the display. The display will also show the "HOLD" symbol.
- 2.) Press the "HOLD button" again to exit from the data hold function.

4. Data Record (Max / Min Reading)

- 1.) To start recording the measurement data, press the "REC button" once. The display will show the "REC" symbol on the display.
- 2.) While the "REC" symbol is on display, press the "REC button" once to display the Maximum measured data recorded. The "MAX" symbol will also show on the display. Press the "REC button" once again to display the Minimum measured data recorded. The "MIN" symbol will also show on the display. To view back "Max" ("Min") measured data, press "REC button", alternately. To clear the stored MAX/MIN values, while on the "MAX" display (if Maximum value is to be cleared) or on the "MIN" display (if Minimum values is to be cleared), press continuously the "HOLD button" until value is cleared and the display goes back to "REC" display.
- 3.) To exit from Data Record function, press the "REC button" for at least 2 seconds and the display will go back to current measuring display.

5. Auto Power Off

This unit will automatically switch off if none of the buttons are pressed for approximately 10 minutes.
 Note: The Auto Power Off feature is disabled during Data Record function.

6. Specifications

a. General Specifications

Model	EM-1000
Display	8 mm LCD display
Measurement	Anemometer, Humidity, Temperature, Light, Air flow (CFM / CMM).
Operating Humidity	Max. 80% RH.
Operating Temperature	0 - 50°C (32 - 122°F)
Over Input Display	Indication of " - - - "
Power Supply	006P DC 9V battery (Heavy duty type)
Power Consumption	Approx. DC 6.2 mA
Weight	160g (battery included)
Dimension (HWD)	156 x 60 x 33 mm (6.14 x 2.36 x 1.29 inch)

b. Resolution (23 ± 5°C)

Measurement	Range	Resolution	
Air velocity	ft/min	80 - 5,910 ft/min	1.0 ft/min
	m/s	0.4 - 30.0 m/s	0.1 m/s
	km/h	1.4 - 108.0 km/h	0.1 km/h
	MPH	0.9 - 67.0 MPH	0.1 MPH
	knots	0.8 - 58.3 knots	0.1 knots
	Temperature (thermister)	32 - 122°F	0.1 °F
	0 - 50°C	0.1 °C	

Measurement	Range	Resolution	
Air flow	CMM	54,000 CMM	0.001 - 1 CMM
	cube meter / min		
	CFM	1,908,400 CFM	0.001 - 100 CFM
cube feet / min			

Measurement	Range	Resolution	
Humidity	% RH	10 - 95 % RH	0.1 % RH
	Temperature	32 - 122 °F	0.1 °F
	(thermister)	0 - 50 °C	0.1 °C

Measurement	Range	Resolution	
Light	Lux	0 - 2,200 Lux	1 Lux
		1,800 - 2,000 Lux	10 Lux
* auto range	Ft-cd	0 - 204.0 Ft-cd	0.1 Ft-cd
		170 - 1,860 Ft-cd	1 Ft-cd

Measurement	Range	Resolution
Temperature (Type K)	-148 - +2,372 °F	0.1 °F
	-100 - +1,300 °C	0.1 °C

Remark :

ft/min : feet per minute MPH : miles per hour
 m/s : meters per second knots : nautical miles per hour
 km/h : kilometers per hour Ft-cd : feet candle

c. Accuracy

Measurement	Range	Accuracy
Air velocity	80 - 5,910 ft/min	≤ 20 m/s : ±3% F.S.
	0.4 - 30.0 m/s	> 20 m/s : ±4% F.S.
	1.4 - 108.0 km/h	
	0.9 - 67.0 MPH	
	0.8 - 58.3 knots	
	32 - 122°F	± 2.5 °F
	0 - 50°C	± 1.2 °C

Measurement	Range	Accuracy
Humidity	10 - 95 % RH	< 70% RH : ±4% RH
		≥ 70% RH : ±(4% rdg + 1.2 % RH)
	32 - 122 °F	± 2.5 °F
	0 - 50 °C	± 1.2 °C

Measurement	Range	Accuracy
Light	0 - 2,000 Lux	± 5% rdg ± 8 dgt
	0 - 1,860 Ft-cd	

Measurement	Range	Accuracy
Temperature (Type K)	-148 - +2,372 °F	± (1% rdg + 2°F)
	-100 - +1,300 °C	± (1% rdg + 2°C)

Measurement	Area setting
CMM	0.001 - 30.000 meter square
CFM	0.01 - 322.92 feet square

7. Battery Replacement

- 1.) When the LCD display shows "LO BAT", the battery needs to be replaced.
- 2.) Open the screw of the battery cover by screwdriver, then remove the battery.
- 3.) Replace the battery with a new one and position this new battery correctly inside the meter's battery compartment.
- 4.) Fasten back the cover.

The instrument cannot measure accurately after low battery indicator is displayed. Please replace the battery immediately.

8. Storage

For proper storage, avoid places where the device can be exposed to direct sunlight, high humidity, high temperature, vibration and shock, dust, rust, corrosion, etc. Remove battery when the device will not be used for a long period of time.

9. Accessories

- Battery x 1
- Hand Strap x 1
- Instruction manual x 1

* K type Thermocouple probe sold separately