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## 4-in-1 Mini Environment Meter



**Code: 343510**

## Operating Instructions

# 4-in-1 Mini Environment Meter

Your purchase of this 4-in-1 environment meter marks a step forward for you into the field of precision measurement. Although this meter is a complex and delicate instrument, its durable structure will allow many years of use if proper operating techniques are developed. Please read the following instructions carefully and always keep this manual within easy reach.

## 1. FEATURES

- 4-in-1 professional measuring instrument: Anemometer, Hygrometer, Thermometer and Light Meter.
- Tiny bone shape with lightweight and small size case design are suitable for handling with one hand.
- Wristlet design provides extra protection to the instrument, especially for user one hand operation.
- Low-friction ball bearing mounted wheel design provides high accuracy at high and low air velocity.
- Exclusive photo diode and colour correction filter light sensor, spectrum meets C.I.E. photopic.
- High precision humidity sensor with fast response time.
- Standard K-type (NiCr-NiAl) thermocouple input jack suitable for all kinds of K-type probe.
- Built-in microprocessor circuit assures excellent performance and accuracy.
- Concise and compact buttons arrangement, easy operation.
- Memorise the maximum and minimum value with recall.
- °C/°F detection by pressing button on front panel.
- Lux/Footcandles selection by pressing button on front panel.
- Air velocity measuring units selection by pressing button on front panel for five kinds of units.
- Multi-channel display for relative humidity and temperature measured values or air velocity and temperature measured values at the same time.
- Zero button design enables light meter calibration.
- Hold function to freeze the current reading value.

## 2. FRONT PANEL DESCRIPTION

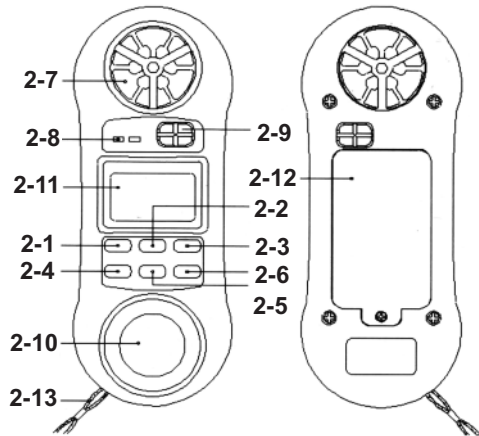


Fig. 1

- |                      |                                |
|----------------------|--------------------------------|
| 2-1 Power Button     | 2-7 Air Flow Sensor            |
| 2-2 Hold Button      | 2-8 Thermocouple Input Socket  |
| 2-3 Max/Min Button   | 2-9 RH Sensor                  |
| 2-4 Unit/Zero Button | 2-10 Light Sensor              |
| 2-5 °C/°F Button     | 2-11 LCD Display               |
| Lux/FC Button        | 2-12 Battery Compartment/Cover |
| 2-6 Function Button  | 2-13 Wristlet                  |

## 3. SPECIFICATIONS

### 3.1 General Specifications

Display	8mm LCD display
Measurement	Anemometer, Humidity, Temperature, Light
Operating Humidity	Max. 80%RH
Operating Temperature	0 to 50°C (32 to 122°F)
Over Input Display	Indication of " - - - "
Power Supply	006P DC 9V battery (heavy duty)
Power Consumption	Approx. DC 6.2 mA
Weight	160g (inc. battery)
Dimension	HWD 156 x 60 x 33mm
Standard Accessory	Instruction manual
Optional Accessories	Carry case, Temperature probes

### 3.2 Electrical Specification (23 ±5°C)

Measurement	Range	Resolution	
Air Velocity	ft/min	80 to 5910ft/min	1ft/min
	m/s	0.4 to 30.0m/s	0.1m/s
	km/h	1.4 to 108.0km/h	0.1km/h
	mph	0.9 to 67.0mph	0.1mph
	knots	0.8 to 58.3 knots	0.1 knots
Temperature semiconductor	0 to 50°C	0.1°C	
	32 to 122°F	0.1°F	
Humidity	%RH	10 to 95%RH	0.1%RH
	Temperature semiconductor	0 to 50°C	0.1°C
Light	Lux	0 to 2,200 Lux	1 Lux
	*auto range	1,800 to 20,000 Lux	10 Lux
FC	0 to 204.0FC	0.1FC	
	170 to 1,860FC	1FC	
Temperature K-type	-100 to 1300°C	0.1°C	
	-148 to 2372°F	0.1°F	

Measurement	Range	Accuracy
Air Velocity	80 to 5910ft/min	≤20m/s: ±3% F.S.
	0.4 to 30.0m/s	
	1.4 to 108.0km/h	>20m/s: ±4% F.S.
	0.9 to 67.0mph	
	0.8 to 58.3 knots	
Humidity	0 to 50°C	±1.2°C
	32 to 122°F	±2.5°F
Light	0 to 20,000 Lux	±5% rdg ±8 dgt
	0 to 1,860FC	
Temperature K-type	-100 to 1300°C	±(1% rdg + 1°C)
	-148 to 2372°F	±(1% rdg + 2°F)

Remark:

ft/min: feet per minute  
m/s: metres per second  
km/h: kilometres per hour

mph: miles per hour  
knots: nautical mph  
FC: footcandles

## 4. MEASURING PROCEDURE

### 4.1 Air Velocity Measurement

- 1) Power on the instrument by pressing the "Power Button" (2-1, Fig. 1)
- 2) Select the Anemometer function by pressing "Function Button" (2-6, Fig. 1)
- 3) Press the "Unit/Zero Button" (2-4, Fig. 1) to select unit that you want and then face the "Air Flow Sensor" (2-7, Fig. 1) to the source of the wind.
- 4) Allow time for the reading to become stable and note the value indicated. From a practical point of view the velocity may fluctuate.

### 4.2 Temperature Measurement (Thermocouple)

- 1) Power on the instrument by pressing the "Power Button" (2-1, Fig. 1)
- 2) Plug a K-type thermocouple probe in the "Thermocouple Input Socket" (2-8, Fig. 1)
- 3) Select the Temperature function by pressing "Function Button" (2-6, Fig. 1)
- 4) Contact the Thermocouple Sensor Head with measuring object and the reading value will be displayed on the LCD display.

### Measuring Consideration of Temperature Measurement (Thermocouple)

\* Please make sure the polarity is correct when you plug a thermocouple probe in the Temp. Input socket.  
\* The temperature difference between thermocouple probe and thermometer will cause an inaccurate measuring result. Therefore, for the best measuring and accuracy performance, whenever you change a probe or plug in a new probe, thermal equivalent between probe plug and meter's input socket is a necessary condition. Thermal equivalent procedure may take a few minutes and apply only when the probe has been exposed to an ambient temperature different from the meter.

### 4.3 Humidity & Ambient Temperature Measurement

- 1) Power on the instrument by pressing the "Power Button" (2-1, Fig. 1)
- 2) Select the Relative Humidity Function by pressing the "Function Button" (2-6, Fig. 1)
- 3) At the mean time the reading value of relative humidity and temperature will be displayed on the LCD display.
- 4) When the meter is applied in a new environment, a few minutes are required to reach a stable condition.

### 4.4 Light Measurement

- 1) Power on the instrument by pressing the "Power Button" (2-1, Fig. 1)
- 2) Select the Light Measurement function by pressing the "Function Button" (2-6, Fig. 1) until the light value is displayed. The light display digits are oriented 180° from the other function displays for easy exposure and output reading of the light sensor.
- 3) Press the "Lux/FC Button" (2-5, Fig. 1) to select measuring unit.

### Zero Offset Adjustment of Light Function

\* For bet results, zero the light sensor prior to use in a dark environment. Placing the light sensor end of the meter under a desktop or flat surface so as to block any light can accomplish this. Then press the "Unit/Zero Button" (2-4, Fig. 1) to set the meter indication to zero.  
\* Zero point can drift due to environment temperature and battery power change as well as for other reasons. It is recommended that the zero be checked frequently using the above procedure.

### 4.5 Change °C/°F

During the temperature measurement, if you intend to change the temperature units from "°C" to "°F" or "°F" to "°C", then just press the "°C/°F Button" (2-5, Fig. 1) once.

## 5. OTHER FUNCTIONS

### 5.1 Hold Function

Whenever you press the "Hold Button" (2-2, Fig. 1) the meter will freeze the current reading value with a "HOLD" symbol on the display.

### 5.2 Data Record Function

- 1) The Data Record function records and displays the maximum and minimum reading values. Start the Data Record function by pressing

the "Max/Min Button" (2-3, Fig. 1) once. There will be a "REC" symbol on the display.

- 2) With the "REC" symbol on the display:
  - (a) Press the "Max/Min Button" (2-3, Fig. 1) once and the "Max" symbol along with the maximum value will appear on the display.
  - (b) Press the "Max/Min Button" again, the "Min" symbol along with the minimum value will appear on the display.
  - (c) To exit the memory record function, press and hold the "Max/Min Button" continuously for at least 2 seconds. The display will revert to the current reading.
  - (d) Clear the Max/Min value recorded by pressing the "Hold Button" (2-2, Fig. 1) once. Previous recorded Max/Min values will be given up and then revert to the REC function to continue recording.

### 5.3 Auto Power Off Disable

In order to prolong the battery life, the instrument has an "Auto Power Off" function. The meter will switch off automatically if no buttons are pressed for around 10 minutes.

## 6. BATTERY REPLACEMENT

- 1) When the LCD shows " " symbol, it is necessary to replace the battery. However, measurement may still be made for several hours after the low battery indicator appears.
- 2) Open the "Battery Compartment/Cover" (2-12, Fig. 1) and remove the battery.
- 3) Install a fresh 9V battery (Alkaline or Heavy Duty type) and then replace the cover.

## 7. OPTIONAL TEMPERATURE PROBES

Heavy duty surface probe <b>32102</b>	Suitable for measuring a variety of surface temperatures. Length 130mm. Max Temp: 1000°C
Penetration probe <b>32103</b>	Suitable for liquids and semi-solids. Length 130mm. Max Temp: 250°C
Fast response air/gas probe <b>32108</b>	Ideal for refrigeration, air conditioning and outdoor readings. Length 130mm. Max Temp: 250°C
Reinforced needle probe <b>32123</b>	Durable probe for asphalt and other heavy duty applications. Length 300mm. Max Temp: 250°C
Long series asphalt probe <b>32126</b>	Suitable for long reach into asphalt heaps, corn silos and haystacks. Length 1400mm. Max Temp: 250°C
Hammer-in 'T' Bar probe <b>32130</b>	Suitable for asphalt surfaces, etc. Length 120mm. Max Temp: 400°C
Pipe clamp probe <b>32109</b>	For heating and ventilation pipes. Maximum pipe diameter: 30mm. Max Temp: 100°C
Exposed junction wire probe <b>32106</b>	Suitable for general purpose air and surface. Length 1000mm. Max Temp: 350°C
Magnetic surface probe <b>32100</b>	Suitable for monitoring ferrous surfaces. Diameter: 20mm. Max Temp: 150°C

York Survey Supply Centre carries a range of K-type thermometers and probes for all applications - call our sales team or visit our website for more details.