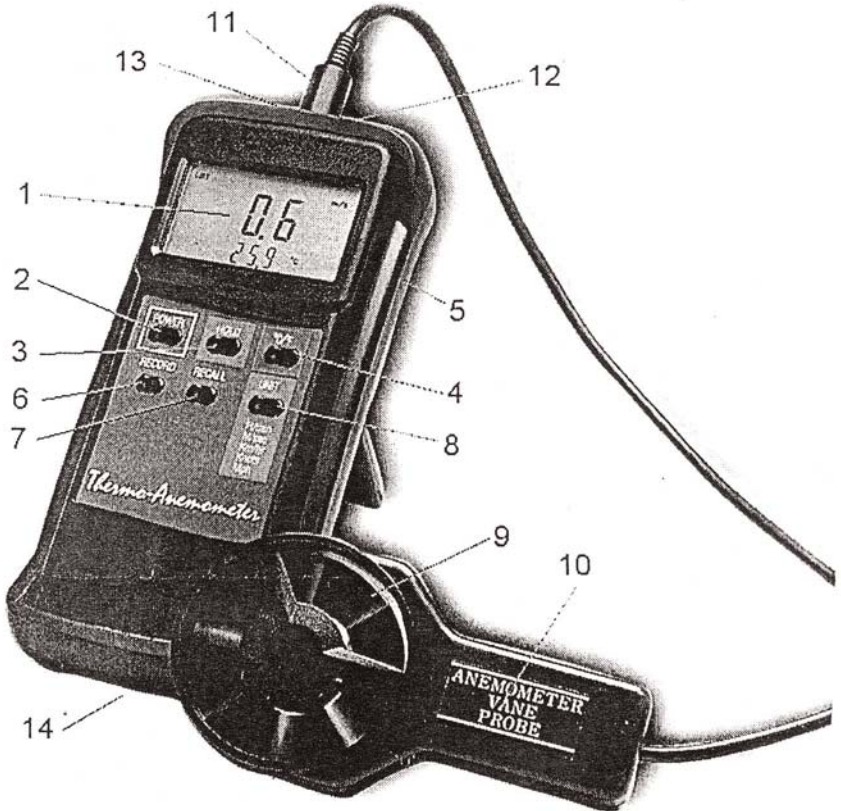


INSTRUCTION MANUAL

DIGITAL THERMOMETER / ANEMOMETER

**INTRODUCTION**

Congratulations on your purchase of this Heavy Duty Anemometer. The Heavy Duty Anemometer is an instrument used for measuring the speed (velocity) at which air is flowing. This vane anemometer indicates air velocity in five units of measure: Feet per minute, Meters per second, Miles per hour, Kilometers per hour, Knots.

Vane anemometers use a remote wheel that freely rotates in response to air flow. In addition to air velocity, the Vane Anemometers measure temperature in both Centigrade and Fahrenheit via a built in thermistor.

SECTION 2: SPECIFICATIONS

Circuit:	Custom LSI microprocessor circuit.
Display:	Dual function, 13 mm(0.5") Super large 1999 LCD display with contrast adjustment for best viewing angle.
Measurement: units	m/s, km/h, ft/min, knots, mile/h, Temp.- °C, °F.
Data hold	Retain reading in display
Sensor Structure	Air velocity sensor: Conventional twisted vane arms and low-friction ball-bearing design. Temperature sensor: Precision thermistor.
Memory Recall	Records Max, Min and Average readings with RECALL.
Power off	Auto shut off saves battery life, or manual off by push button.
Data Output	RS 232 PC serial interface.
Operating Temp. (instrument only)	0°C to 50°C (32°F to 122°F).
Operating Humidity	Max. 80% RH.
Power Supply	006P DC 9V battery (Heavy duty type).
Power Current	Approx. DC 8.3 mA.
Weight	381 g / 0.84 LB (included batteries & probe)
Size	Main instrument: 180 x 72 x 32 mm (7.1 x 2.8 x 1.3 inch). Sensor Head: Round, 72 mm Dia.
Accessories	Instruction manual, Sensor probe, Carrying case.

2.2 Air Velocity Specifications

Measurement	Range	Resolution	Accuracy
m/s (meters/sec)	0.4 - 25.0 m/s	0.1 m/s	± (2% + 1d)
km/h (kilometers/hour)	1.4 - 90.0 km/h	0.1 km/h	
ft/min (feet/min)	80 - 4925 ft/m	10 ft/mi	
mile/h (miles/hour)	0.9 - 55.9 mile/h	0.1 mile/h	
knots (nautical miles/hour)	1.9 - 38.8 knots	0.1 knots	

2.3 Temperature Specifications:

Range (probe only)	Resolution	Accuracy ±
0°C to 60°C / 32°F to 140°F	0.1°C / 0.1°F	0.8°C / 1.5°F

SECTION 3: FRONT PANEL

(Numeric designators refer to the illustration on page one.)

- | | |
|---------------------------|------------------------------|
| 1 LCD Display | 8 "UNITS" displayed |
| 2 "POWER" Off/On | 9 Sensor Head |
| 3 Data "HOLD" | 10 Sensor Handle |
| 4 °C/°F Selection | 11 Sensor Plug |
| 5 LCD Contrast Adjustment | 12 Sensor Input Socket (top) |
| 6 Memory "RECORD" | 13 RS-232 Output jack (top) |
| 7 Memory "RECALL" | 14 Battery Cover (rear) |

SECTION 4: OPERATION

- 4.1 Install the “Sensor Plug” into the “Sensor Input Socket”.
- 4.2 Press “Power Off/On” to turn the instrument power “ON”.
- 4.3 Select the temperature units by pressing “°C/°F”. The display will indicate “°C” or “°F” as selected.
- 4.4 Select the air velocity units by pressing “Unit”. The display will indicate “m/s”, “km/h”, “ft/min”, “knots”, or “mile/h” as selected.
- 4.5 The meter will now display the current temperature and air velocity.

Note: For maximum accuracy in temperature measurements, the yellow dot on the vane should be facing opposite the direction of the air flow.

4.6 Data Hold:

During the measurement, pressing “Data Hold” will hold the displayed value and the LCD will display the “D.H” indicator. Press “Hold” again to release the data hold function.

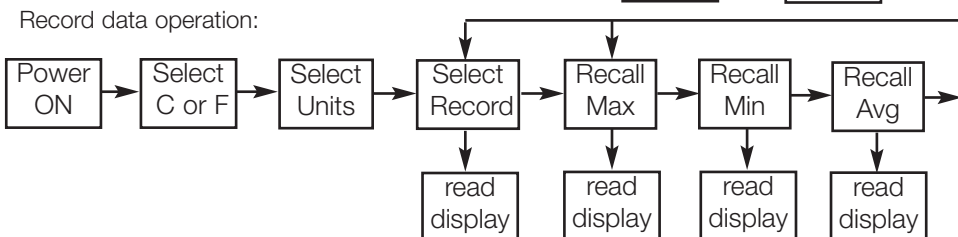
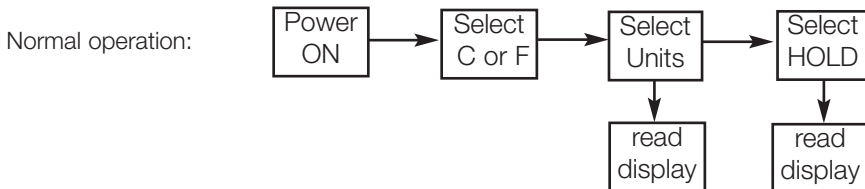
4.7 Data Record (Max., Min., Average reading):

When selected, the DATA RECORD function records and stores the max, min and average readings.

To start the DATA RECORD function:

- a) Press “RECORD” once. The “REC” indicator will appear on the display.
- b) Press “RECALL” once to enter the “Max” mode. The “Max” indicator along with the maximum values will appear on the LCD display.
- c) Press “RECALL” once, the “Min” indicator along with the minimum values will appear on the LCD display.
- d) Press “RECALL” once, the “AVG” indicator along with the average values will appear on the LCD display.
- e) To disable the “Data Record” function, press “Record” once again. The display indicators “REC”, “Max”, “Min”, “AVG” will disappear.

4.8 Simplified operational flow diagrams:



SECTION 5: MEASUREMENT CONSIDERATIONS

- 5.1 The meter is designed with an “Auto shut off” feature to save battery life. The power will automatically shut off if no function button is pressed in any 10 minutes period. To disable “Auto shut off” while taking measurements, press “RECORD” and engage the record function.
- 5.2 It may be necessary to adjust the display contrast due to a change in viewing angle or voltage drift. Use the “LCD Contrast adjustment” located on the right side of the meter to set the preferred contrast.
- 5.3 The volume of air flowing through a duct or vent can be determined by taking the area of the duct in square units (i.e. square feet) and multiplying this value by the measured linear velocity (i.e. feet per minute). This gives: $\text{ft}/\text{min} \times \text{ft}^2 = \text{ft}^3/\text{min}$ (CFM)

SECTION 6: RS232

The meter is designed with a built-in RS232 serial data port. This interface was designed to operate with the Extech Data Acquisition Software (p/n 407000) and enables the user to capture, store and display readings on a PC. For more information, contact Extech or refer to that manual for details on the interface.

SECTION 7: BATTERY REPLACEMENT

- 7.1 The low battery indication appears as a “LBT” on the left corner of the display. When the “LBT” appears, replace the battery as soon as possible. Reliable readings can be obtained for several hours after the first appearance of the low battery indication.
- 7.2 To replace the battery:
 - a) Pry the Battery Cover off using a small coin or screwdriver and remove the battery.
 - b) Replace with 9V battery (heavy duty type) and reinstall the cover.
 - c) Make sure the battery cover is secured after changing the battery.

SECTION 8: CALIBRATION

- 8.1 Remove the battery from the battery compartment to provide access to the calibration adjustments.
- 8.2 Adjust VR5 to the known ambient temperature.
- 8.3 Adjust VR7 to a known 30m/s source.
- 8.4 VR1 and VR6 are for a factory calibration only. Do not adjust.

