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The Specification of Hot Wire Anemometer Manual PCE-423

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1. Instructions

Your purchase of this HOT WIRE ANEMOMETER makes a step forward for you into the field of precision measurement.
Although this ANEMOMETER 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..

Features

1. Thermal anemometer, available for very low air velocity measurement.
2. Slim probe, ideal for grilles & diffusers.
3. Combination of hot wire and standard thermistor, deliver rapid and precise measurements even at low air velocity.
4. Records Maximum and Minimum readings with recall.
5. Microprocessor circuit assures maximum possible accuracy, provides special functions and features.
6. Super large LCD with dual function meter's display, read the air velocity & temp. at the same time.
7. Records Maximum and Minimum readings with recall.
8. Data Hold.
9. Power supply by 9V battery.
10. The portable anemometer provides fast, accurate readings, with digital readability and the convenience of a remote probe separately.
11. Multi-functions for air flow measurement: m/s, km/h, ft/min, MPH, Knots.
12. Build in temperature Cº, Fº measurement.
13. Thermistor sensor for Temp. measurement, fast response time.
14. Used the durable, long-lasting components, including a strong, light weight ABS-plastic housing case.
15. Deluxe hard carry case.
16. Applications: Environmental testing, Air conveyors, Flow hoods, Clean rooms, Air velocity, Air balancing, Fans/motors/blowers, Furnace velocity, Refrigerated case, Paint spray booths.

2. Specifications

General Specifications

Display	46.7mm × 60 mm larger LCD display. Dual function meter's display.
measurement	m/s (meters per second) km/h (kilometers per hour) ft/min (feet per minute) MPH (miles per hour) knots (nautical miles per hour) Temp. --- , Data hold.
Memory	Maximum and Minimum with recall
Sampling	Approx.0.8 sec
Operating Temperature	0 to 50 (32 to 122)
Operating Humidity	Less than 80% RH
Power Supply	9V battery
Power Current	Approx. DC 60~90mA
weight	280g
Dimension	210mm×75mm×50mm
Accessories included	Hot wire sensor 9V battery

Electrical Specifications

Air Velocity			
Measurement	Range	Resolution	Accuracy
m/s	0.1~25.0m/s	0.01m/s	±(5%+1d)reading
km/h	0.3~90.0km/h	0.1km/h	
ft/min	20~4925/min	1ft/min	
MPH	0.2~ 55.8 MPH	0.1MPH	
knots	0.2~48.5knots	0.1knots	
Notes:			
m/s ― meters per second km/h ―kilometers per hour ft/min ―feet per minute MPH - miles per hour knots― nautical miles per hour			
Temperature			
Measuring Range		0 to 50 (32 to 122)	
Resolution		0.1 /0.1	
Accuracy		±1 /1.8	

3. Button

1, Press .The thermal sensor is heated up (5s). Measurement view is opened: The current reading is displayed, or "————"lights up if no reading is available. Press again, turn off the instrument.

2, Press Hold Zero to freeze or unfreeze the displayed readings or air velocity Zero Adjust.

3, Press Enter to enter a Setup option. Press Enter again to store the displayed setting in memory.

4, Press Setup to turn on the backlight. Press it again to turn off the backlight. Press Setup button for 3 seconds to start or exit Setup. (See "Changing Setup Options.")

5, Press ▲ Unit to scroll to the Setup option you want to change. Press ▲ Unit to increase the displayed setting.

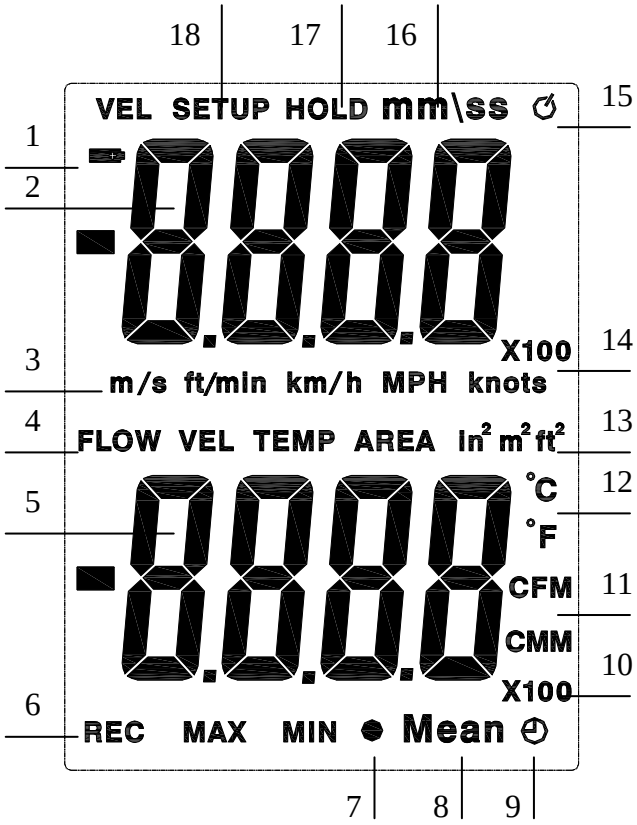
6, Press Unit ▼ to start recording and press again to stop recording .if enter a Setup option .scroll to the Setup option you want to change. Press Unit ▼ to decrease the displayed setting.

7, performing a multi-point mean calculation or performing a mean calculation in time.

8, Press Max Min to step through the maximum and minimum readings. To exit the MAN/MIX mode, press the Max Min button for 2 seconds to return to normal operation.

9, To change between displaying the temperature, flow velocity, and calculated volumetric flow rate: Press Flow Temp.

4. Display Elements



1. Low Power.
2. Primary Display: air velocity, recording data or time.
3. Air velocity units.
4. Secondly display data.
5. Secondly display: air flow, temperature, or air velocity data.
6. Record MAX, MIN display.
7. Sign of multi-point mean calculation.
8. Mean calculation
9. Sign of mean calculation in time.
10. The multiple of Secondly display data.
11. Flow units.
12. Temperature units.
13. Flow area units.
14. The multiple of Primary display data.
15. The Sign of Auto Power Off.
16. The sign of time.
17. Freezing the data.
18. Entering or Exiting Setup.

4.1 Changing Setup Options

Use Setup to change area unit, flow area, sleep mode settings. The thermometer stores the settings in its memory.

4.2 Setup Options

Option	Menu item	Settings
Chose area unit	**Unit**	**set area unit**
Change the flow area	**area**	**set area of measuring air flow**
Auto Power Off mode	**SLP**	**auto off or on**

4.3 Entering or Exiting Setup

When the thermometer is in Setup mode, the display shows **SETUP.**

Press Setup button for 3 seconds start or exit Setup.

4.4 Changing a Setup Option

1. Press ▲ Unit or Unit ▼ to scroll to the setup option you want to change.
2. Press Enter to indicate that you want to change this setting.
3. Press ▲ Unit or Unit ▼ until the setting you want to use appears on the display.

2. Press Enter to store the new setting in memory.

Notes: Setup is disabled in **MIN MAX, Mean** mode.

4.5 Area unit Setting

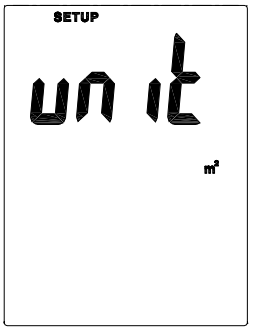


Fig 1

1. When the thermometer is in Setup mode, press Unit or Unit to scroll to the area unit setup option (refer Fig.2).
2. Press Enter button., The string **"AREA"** and area unit shows in the screen.
3. Press Unit or Unit to scroll to unit that you want to change((refer Fig.3).
).
4. Press Enter to store the new area in memory.

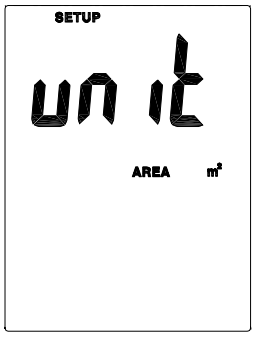


Fig.2

4.6 Area Setting

Changing the number digits of area and Change the number value of area. Press Unit or Unit to scroll to the area value setup option when the thermometer is in the setup mode. Press Enter button, the area number flashes. Press Unit or Unit to scroll to digit that you want to change (refer Fig.3). Press Enter t, the screen indicate that area number with a flashing digit. Press Unit or Unit to change the flashing digit from 0 to 9. Press Mean to change the station of flashing digit and press Unit or Unit to change the number, the adjust order is from right to left. Press Enter to store the new area in memory.

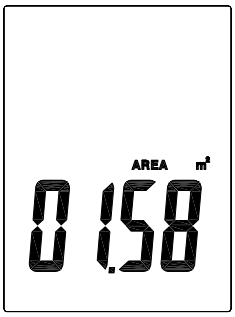
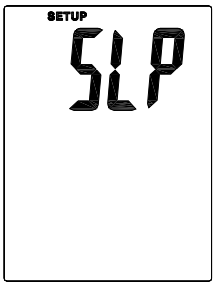


Fig.3

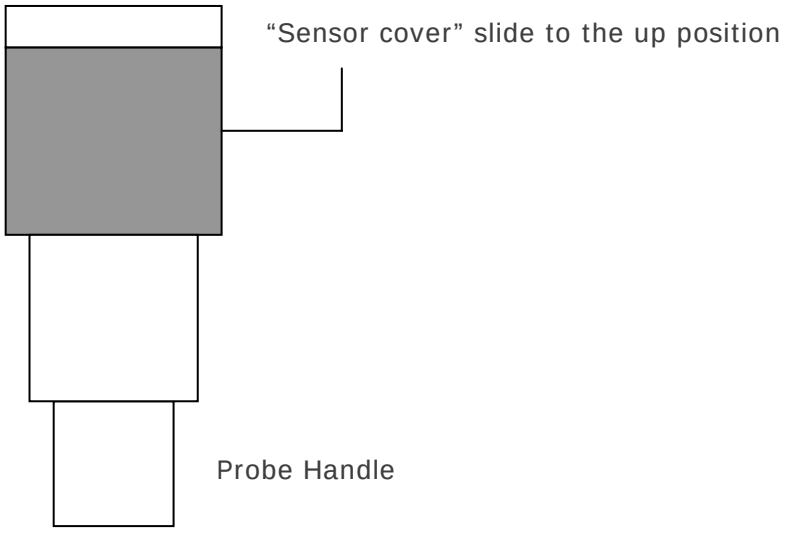
4.7 Auto Power Off Mode



The thermometer enters sleep mode (default). That is to say, the meter will automatically shut off after 20 minutes if no button press occurs for 20 minutes. When the thermometer is in Setup mode, the display shows **SETUP.** Press Unit or Unit to scroll to the " **SLP** " page . Press Enter to indicate "**On**" or "**OFF**". Press Unit or Unit until the setting you want to use appears on the display. Press Enter to store the new setting in memory. **On** (sleep mode on)or **0FF** (sleep mode off).

5. Measuring Procedure

1. Connect the "Probe's Plug" to the "Probe Input Socket".
2. Power on the meter by push the "Power On/Off Button".
3. Select the desire air velocity units and temperature units.
4. Zero setting:
   a. On the "Sensing Head", slide the sensor cover to the up position to let the air velocity sensor isolated from the environment.
   b. Push the "Zero Button" to let reading value of air velocity shows zero value.



5. Slide the sensor cover to the down position, let the air velocity sensor to contact the air, refer Fig.2. Extent the telescope probe to the convenient length, refer Fig.4.

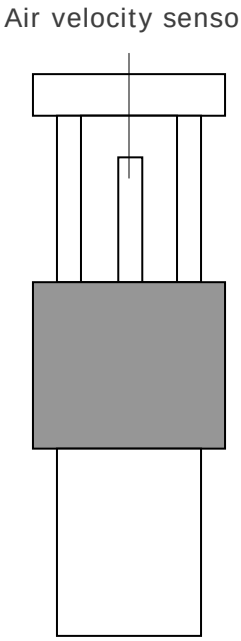


Fig 2

Fig.3

6. Direction of the sensor head:
   There is mark on the top of the “Sensor Head”, When make the measurement, then this mark should against the measured wind, refer Fig. 4, Fig5.When sensor head face against the measurement air, then sensor head face against the measurement air, then the upper display will show the air velocity value. The lower display will show the temperature value.

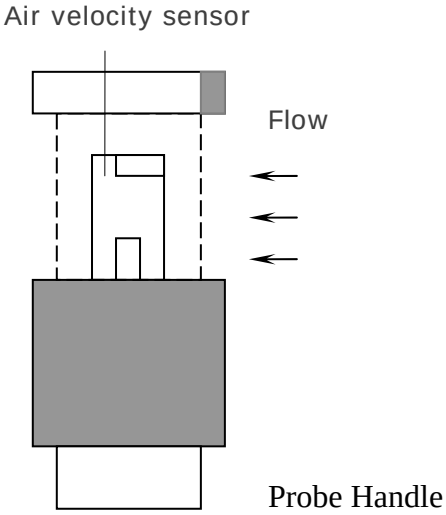


Fig.4

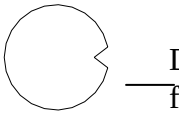


Fig.5

6. Performing a multi-point mean calculation

1. Press Mean .

- **Mean** is lit. The number of readings recorded is displayed in the upper line, while the current reading is displayed in the lower line.

2. To change between displaying the temperature, flow velocity and calculated volumetric flow rate: Press Flow Temp.

3. If we want to change the units of the current reading, press Unit ▼ .

4. To include readings (in the desired quantity): Press Enter (several times).

5. To end measurement and calculate the mean value:Press Mean .

- **Mean** flashes. The calculated spot mean value is displayed.

4 To return to measurement view: Press Mean .

7. Performing a mean calculation in time

1. Press Mean for 2 seconds.

Mean ◴ is lit. The elapsed measuring time (mm:ss) is displayed in the upper line, while the current reading is displayed in the lower line.

2. To change between displaying the temperature, flow velocity and calculated volumetric flow rate: Press Flow Temp.

3. If we want to change the units of the current reading, press Unit ▼.

4. To interrupt/continue measurement: Press each time.

5. To end measurement and calculate the mean value: Press Mean.

Mean ◴ Mean flashes. The calculated mean value in time is displayed.

7. To return to measurement view: Press Mean.

8. Holding the Displayed Readings

1. Press Hold Zero to freeze the readings on the display .The display shows **HOLD**.

2. To change between displaying the temperature, flow velocity and calculated volumetric flow rate: Press Flow Temp.

3. Press Hold Zero again to turn off the **HOLD** function.

9. Viewing the MIN, MAX Readings

1. Press Max Min to step through the maximum (MAX), minimum (MIN), or the average (AVG) readings. The elapsed time since entering MAX/ MIN mode, or the time at which the minimum or maximum occurred appears on the display.

2. Press Max Min button for 2 seconds to exit MAX/MIN mode.

10. Replacing the Batteries

1. Turn off the thermometer if necessary.
2. Loosen the screw and remove the battery door.
3. Replace 9V batteries.
4. Replace the battery door and tighten the screw.

In this direction will find a vision of the measurement technique:
http://www.industrial-needs.com/measuring-instruments.htm

NOTE: "This instrument doesn't have ATEX protection, so it should not be used in potentially explosive atmospheres (powder, flammable gases)."