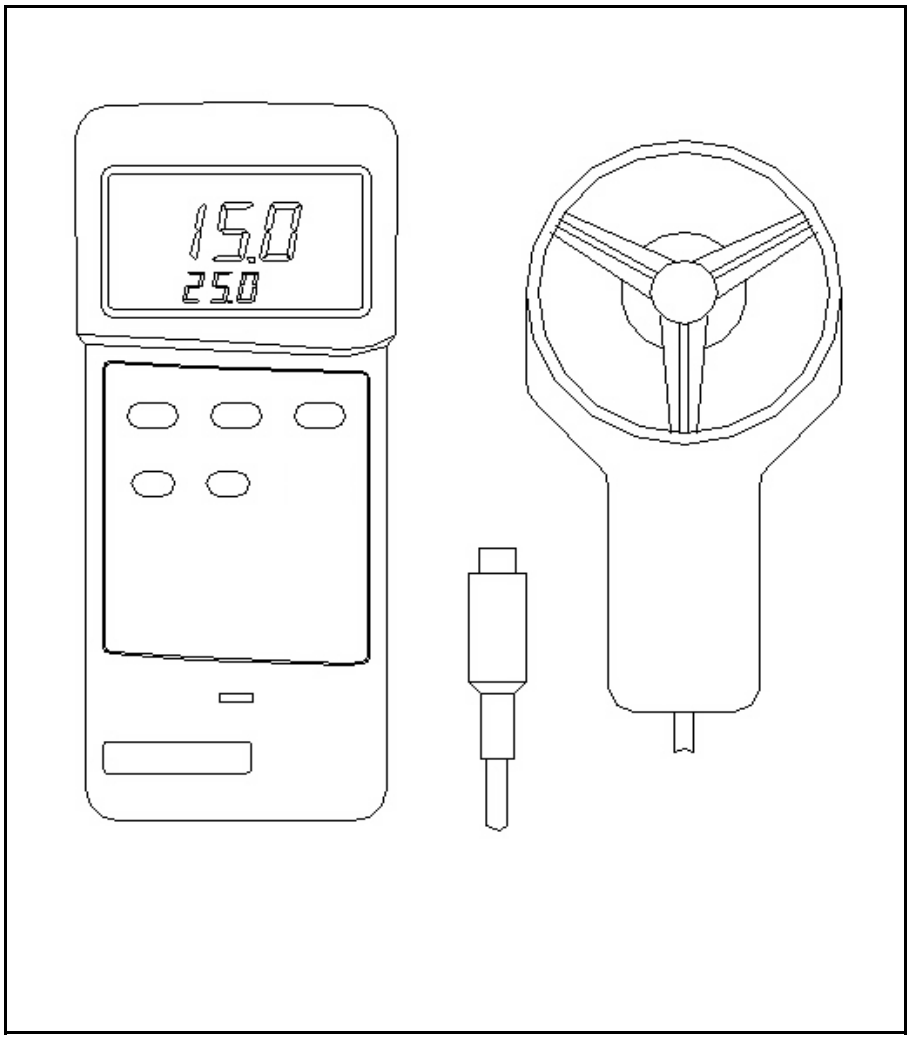
DIGITAL ANEMOMETER

Model : AM-4203



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1. FEATURES

* Microprocessor circuit ensures high accuracy and provides special functions and features.
* Super large LCD display.
* Dual function display.
* Heavy duty & compact case.
* Records Maximum and Minimum and readings.
* Data hold.
* Auto power off saves battery life.
* Operates from 9V battery.
* RS 232 PC serial interface.
* Low-friction ball vane wheels is accurate in both high and low velocities.
* The portable anemometer provides fast, accurate readings, with digital readability and the convenience of a remote sensor separately.
* Multi-functions air flow measurement: m/s, km/h, ft/min, knots. mile/h.
* Build in temperature measurement,℃/℉.
* Thermistor sensor for Temp. measurement, fast response time.
* Uses durable, long-lasting components, enclosed in strong, light weight ABS-plastic housing.
* Wide applications: use this anemometer to check air conditioning & heating systems, measure air velocities, wind speeds, temperature...etc.

2. SPECIFICATIONS

2-1 General Specifications

Circuit	Custom one-chip microprocessor LSI circuit.
Display	61 mm x 34 mm, LCD display. 13 mm (0.5") digit size. Dual function display.
Measurement	m/s (meters per second), km/h (kilometers per hour), ft/min (feet/per minute), knots (nautical miles per hour), mile/h(miles per hour), Temp.- ℃, ℉., Data hold.
Sensor Structure	*Air velocity sensor :* Conventional twisted vane arms and low-friction ball-bearing design.
	Temperature sensor : Precision thermistor.
Memory	Records Maximum and Minimum readings with recall.
Power off	Manual off by push button or Auto shut off after 10 minute (Not activated during memory record function).
Data Output	RS 232 PC serial interface.
Over load indication	Indicated by "- - - -".
Operating Temperature	0 ℃ to 50 ℃(32 ℉ to 122 ℉).
Operating Humidity	Max. 80% RH.

Power Supply	Heavy duty type DC 9V battery, 006P, MN1604(PP3) or equivalent.
Power Current	Approx. DC 8.3 mA.
Weight	381 g/0.84 LB ** Include the battery and the probe*
Size	*Main instrument :* 180 x 72 x 32 mm(7.1 x 2.8 x1.3 inch).
	Sensor Head : Round,72 mm Dia.
Accessories	Instruction manual..... 1 PC Sensor probe..... 1 PC Carrying case..... 1 PC

2-2 Electrical Specifications

A. Air velocity

Measurement	***Range***	***Resolution***	***Accuracy***
m/s	0.4 - 25.0 m/s	0.1 m/s, ≧ 10 m/s 0.01 m/s, < 10 m/s	± (2% + 0.2 m/s)
km/h	1.4 - 90.0 km/h	0.1 km/h	± (2% + 0.8 km/h)
mile/h	0.9 - 55.9 mile/h	0.1 mile/h	± (2% + 0.4 mile/h)
knots	0.8 - 48.6 knots	0.1 knots	± (2% + 0.4 knots)
ft/min	80 - 4930 ft/min	1 ft/min	± (2%+40 ft/min.)

Note:

m/s - meters per second km/h - kilometers per hour

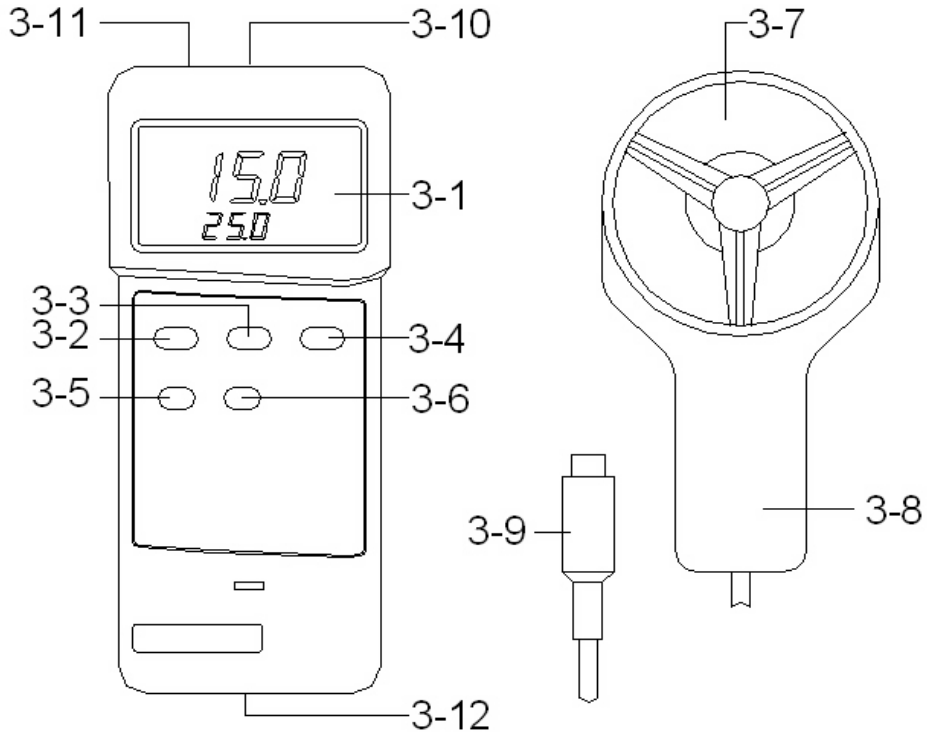
ft/min - feet/per minute knots - nautical miles per hour

mile/h - miles per hour (international knot)

B. Temperature

Measuring Range	0 ℃ to 50 ℃/32 ℉ to 122 ℉
Resolution	0.1 ℃/0.1 ℉
Accuracy	0.8 ℃/1.5 ℉

3. FRONT PANEL DESCRIPTION



3-1 Display
3-2 POWER Button
3-3 HOLD Button
3-4 ℃/℉ Button
3-5 MAX/MIN (REC) Button
3-6 UNIT (m/s, km/h, ft/min, knots, mile/h) Button
3-7 Vane Probe Head
3-8 Vane Probe Handle
3-9 Vane Probe Plug
3-10 Vane Probe Input Socket
3-11 RS-232 Output Terminal
3-12 Battery Compartment/Cover

4. MEASURING PROCEDURE

1) Install the " Probe Plug " (3-9, Fig. 1) into the "Sensor Input Socket (3-12, Fig. 1).
2) Power ON the meter by pressing the " POWER Button " (3-2, Fig. 1).
3) Select the desired temperature units by pressing the " ℃/℉ Button " (3-4, Fig. 1).
4) Select the desired air velocity measurement units by pressing the " UNIT Button " (3-6, Fig. 1).

Measuring Consideration :

The yellow dot mark on the sensor head indicates the " yellow dot mark " should face against the direction of air flow.

5) Data Hold :
During the measurement, pushing the " HOLD Button " (3-3, Fig. 1) will freeze the measured value & the LCD will indicate " D.H. " indicator.

** Push the " HOLD Button " again to release the data hold function.*

6) Data Record (Maximum, Minimum reading)

* The DATA RECORD function displays the maximum and minimum readings. To start the DATA RECORD function, press the " MAX./MIN. Button " (3-5, Fig. 1) once. " REC " symbol will appear on the LCD display.

* With the " REC " symbol on the display :
  (a) Press the " MAX./MIN. Button " (3-5, Fig. 1) once, 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 the " MAX./MIN. Button " continuously for at least 2 seconds. The display will revert to the current reading.

5. AUTO POWER OFF DISABLE

The instrument has built-in "Auto Power Shut-off" in order to prolong battery life. The meter will switch off automatically if none of the buttons are pressed within 10 min.

To de-activate this feature, select the memory record function during measurement, by pressing the " MAX/MIN Button " (3-6, Fig. 1), then the auto power off function will disable.

6. RS232 PC SERIAL INTERFACE

The instrument has RS232 PC serial interface via a 3.5 mm terminal (3-11, Fig. 1).

The data output is a 16 digit stream which can be utilized for user's specific application.

A RS232 lead with the following connection will be required to link the instrument with the PC serial port.

Meter	PC (9W 'D" Connector)
Center Pin (3.5 mm jack plug)	Pin 2
Ground/shield	Pin 5

The 16 digits data stream will be displayed in the following format :

D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0

Each digit indicates the following status :

D15	Start Word = 02		
D14	4		
D13	When send the upper display data = 1 When send the lower display data = 2		
D12, D11	Annunciator for Display		
	℃ = 01	Knot = 09	mile/h = 12
	℉ = 02	Km/h = 10	m/S = 08
	ft/min = 11		
D10	Polarity 0 = Positive 1 = Negative		
D9	Decimal Point(DP), position from right to the left 0 = No DP, 1= 1 DP, 2 = 2 DP, 3 = 3 DP		
D8 to D1	Display reading, D1 = LSD, D8 = MSD For example : If the display reading is 1234, then D8 to D1 is : 00001234		
D0	End Word = 0D		

RS232 setting

Baud rate	9600
Parity	No parity
Data bit no.	8 Data bits
Stop bit	1 Stop bit

7. BATTERY REPLACEMENT

1) When the left corner of LCD display show "  ", it is necessary to replace the battery. However, in-spec. measurement may still be made for several hours after low battery indicator appears before the instrument become inaccurate.
2) Slide the " Battery Cover " (3-12, Fig. 1) away from the instrument and remove the battery.
3) Replace with 9V battery (Alkaline or Heavy duty type) and reinstate the cover.
4) Make sure the battery cover is secured after changing the battery.

8. OPERATIONAL ACCESSORIES

RS-232 cable, Model : UPCB-01	RS-232 cable, used for connecting the vibration meter & the computer.
Data Acquisition software, SW-801-WIN	After setup whole hardware Vibration meter + RS-232 cable + Computer + software (SW-U801-WIN) whole system can execute as a data logger, data recorder.... record data can be retrieved for EXCEL.....
DATA LOGGER, DL-9601A	Can store 8,000 measuring data with time information (year, month, date, hour, minute, second). Sampling time preset from 1 second to 9 hours. Auto or manual data logger.