

AMPROBE®



TMA10A Anemometer

User Manual

ENG **FRE** **SPA**
GER **ITA**

AMPROBE®

**TMA10A
Anemometer**

User Manual

English

6/2018, 6011186 Rev B
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All Amprobe returned for warranty or non-warranty repair or for calibration should be accompanied by the following: your name, company's name, address, telephone number, and proof of purchase. Additionally, please include a brief description of the problem or the service requested and include the test leads with the meter. Non-warranty repair or replacement charges should be remitted in the form of a check, a money order, credit card with expiration date, or a purchase order made payable to Amprobe.

In-warranty Repairs and Replacement – All Countries

Please read the warranty statement and check your battery before requesting repair. During the warranty period, any defective test tool can be returned to your Amprobe distributor for an exchange for the same or like product. Please check the "Where to Buy" section on amprobe.com for a list of distributors near you. Additionally, in the United States and Canada, in-warranty repair and replacement units can also be sent to an Amprobe Service Center (see address below).

TMA10A Anemometer/Thermometer

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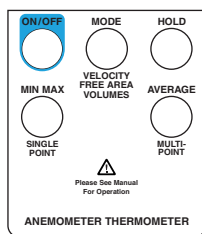
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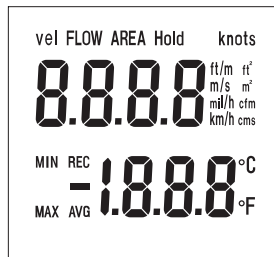
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USING THE PUSHBUTTONS



Button	Description
ON/OFF	Turns the meter on and off.
MODE	Toggle between velocity, free area, and volume.
HOLD	Captures a reading. Sets digit to the desired value.
MIN MAX	View the minimum or maximum. Average or record value.
AVERAGE	Display the average of all the measurements. Select the next digit for editing.

DISPLAY INDICATORS



Vel Air velocity measurement.
FLOW Air flow/air volumen.
AREA Free area default setting.
HOLD Freezes the reading.
knots 1850 meters per hour.
ft/m Feet per minute.
ft² Square feet.
m/s Meters per second.
m² Square meters.
mil/h Miles per hour.
cfm Cubic feet per minute.
km/h Kilometers per hour.
cms Cubic meters per second.
Primary display Numerical display for air velocity, air volume, and free area digit.
°C Celsius units.
°F Fahrenheit units.
Secondary display Temperature display or record number.
MIN Minimum data.
MAX Maximum data.
REC Record and saved.
AVG Average data.
- Polarity indicator for negative temperature.

MAKING MEASUREMENTS

Air Velocity Measurements

Air velocity and temperature measurements can be displayed on this meter in the following units of measure: ft/m (feet per minute) or m/s (meters per second) for air velocity and °F or °C for temperature.

1. Connect the sensor to the sensor input jack on top of the meter.
2. Turn on the meter using the **ON/OFF** button.
3. The 'Vel' indicator should appear on the upper left on the LCD. If not, press and hold the **MODE** button until a beep is heard. Repeat this procedure until 'Vel' appears on the display.



4. Place the sensor in the air current to be measured.
5. View the air velocity and temperature readings on the LCD Display. The upper display shows the air velocity reading. The lower display shows the temperature.

Air Flow Measurements

In order to take air flow measurements, the area of the duct under test (in ft² or m²) must first be determined (check with the duct manufacturer if necessary). Once the area is known, enter the value as follows:

1. Turn on the meter with the **ON/OFF** button.
2. Press and hold the **MODE** button until a beep is heard. "AREA" appears on the display and one digit will be blinking indicating that value can be changed.

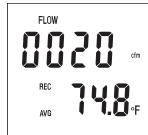


3. Press the **HOLD** button to adjust the digit to the value needed.
4. Press the **AVERAGE** button to select the next digit for editing.
5. When the area is correctly entered, press the **MIN MAX** button once. A beep will sound and the digits will stop blinking.
6. Press the **HOLD** button once to store the area value.
7. The meter is now ready to measure air flow. Place the sensor in the air current and view the air flow and temperature readings on the LCD.

Single Point MIN/MAX/AVG Recording

This meter can record and display the lowest (MIN), highest (MAX), and average (AVG) air velocity, air flow, and temperature readings.

1. Follow the instructions for starting air velocity or air flow measurements detailed on the previous page.
2. Press the **MIN MAX** button. The REC and AVG (average) indicators will appear on the display and the meter will begin recording data.

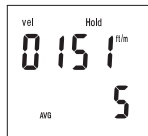


3. When the measurement session is complete (up to 2 hours maximum), press the **HOLD** button until the beep sounds.
4. To view the MIN reading, press the **MIN MAX** button twice or until the MIN indicator appears. The minimum reading will be displayed on the LCD.
5. Press **MIN MAX** again to view the maximum value, the MAX indicator along with the maximum reading will appear on the LCD display.
6. Press **MIN MAX** again to view the averaged value, the AVG indicator along with the average reading will appear on the LCD display.
7. To exit this mode, press and hold the **MIN MAX** button until 2 beeps are heard in rapid succession and the display indicators (REC, MIN, MAX, AVG) disappear.

Multi Point Average Recording

The meter can take up to 8 separate measurements and average them automatically.

1. Follow the instructions for starting air velocity or air flow measurements detailed on the previous page.
2. When the first measurement is taken and is on the display, press and hold the **HOLD** button. Release the button when the tone is heard.
3. The reading will hold and the 'HOLD' icon will appear above it on the LCD.
4. Press and hold the **MIN MAX** button until a tone is heard then release it. The LCD will briefly indicate a number (1 through 8) representing the current measurement number.



5. Repeat this process until up to 8 measurements have been taken.
6. Press the **AVERAGE** button to display the average of all the measurements.
7. To display the average air flow, press the **MODE** button to enter the area, then **MODE** again for air flow.
8. To exit this mode and erase all stored readings, press and hold the **AVERAGE** button until 2 beeps are heard. To exit without erasing readings, press the **HOLD** button.

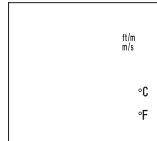
Data Hold Feature

1. While taking measurements you can freeze the displayed reading by pressing and holding the **HOLD** button until a beep is heard.
2. The 'HOLD' indicator will appear on the LCD when the display is in this mode.
3. Press and hold the **HOLD** button until a beep is heard to exit this mode.

Changing the Units of Measure

U.S. units of measure are °F, ft/m (feet per minute), and CFM (cubic feet per minute). Metric units are: °C, m/s (meters per second), and CMS (cubic meters per second).

1. Turn the meter on by pressing and holding both the **ON/OFF** and the **AVERAGE** buttons simultaneously. Release the **ON/OFF** button first then release the **AVERAGE** button. The units of measure will appear on the LCD.



2. Press the **HOLD** button to select Metric and the **AVERAGE** button to select U.S.
3. Press the **MIN MAX** button and an "S" will appear on the LCD.
4. Press the **HOLD** button to advance to the next selection.
5. The baud rate for PC Interface models will appear (1200 or 2400). Select the baud rate, if necessary, by pressing the **HOLD** (1200) or **AVERAGE** (2400) button.
6. To return to normal operation, press **MIN MAX** again (the "S" will reappear) then press and hold the **HOLD** button until the beep is heard.

AUTO POWER OFF

The TMA10A Anemometer turns off automatically after 20 minutes to conserve battery power. Press the **ON/OFF** and **HOLD** buttons to disable the Auto Power Off feature.

ERROR MESSAGE DISPLAY

If the sensor is not connected to the meter or if the sensor is inoperable, the meter beeps, the error message "E6" appears on the display, and the meter shuts down. Connect the sensor or return the meter and sensor for repair.

USEFUL EQUATIONS AND CONVERSIONS

Cubic Equations

CFM (ft³/min) = Air Velocity (ft/min) x Area (ft²)

CMS (m³/sec) = Air Velocity (m/sec) x Area (m²)

Units Conversion Table

	m/s	ft/min	knots	km/h	MPH
1 m/s	1	196.87	1.944	3.6	2.24
1 ft/min	0.00508	1	0.00987	0.01829	0.01138
1 knot	0.5144	101.27	1	1.8519	1.1523
1 km/h	0.2778	54.69	0.54	1	0.6222
1 MPH	0.4464	87.89	0.8679	1.6071	1

REPLACING THE BATTERY

Replace the 9 V battery when the display is flashing or there is no display.

1. Remove the Phillips head screw on the battery compartment cover.
2. Lift off the rear battery compartment cover.
3. Replace the 9 V battery and secure the battery compartment cover.

SPECIFICATIONS

Display	Dual 4-digit (9999 count) LCD
Measurement units	Air Velocity: ft/min (feet per minute); m/s (meters per second) Air Flow: CMS (m ³ /sec) and CFM (ft ³ /min); Temp: °C and °F
Data hold	Freezes displayed reading
Sensors	Air velocity/flow sensor: Conventional angled vane arms with low-friction ball bearing. Temp. sensor: Precision thermistor
MIN MAX Memory	Record and view minimum and maximum readings
Average reading memory	Single Point (up to 2 hours) or Multi-Point (up to 8 readings)
Automatic Power off	Sleep mode (with bypass) after 20 mins. conserves energy
Operating Temperature	32 °F to 122 °F (0°C to 50 °C)
Operating Humidity	Max. 80% RH
Power Supply	9 V battery (Heavy duty alkaline); Battery life: 100 hours
Weight	0.8 lb (363 g) including battery and sensor
Dimensions	Main instrument: 7.1 x 2.8 x 1.4 in (181 x 71 x 38 mm) Sensor head diameter: 70 mm

Air Velocity Measurements	Range	Resolution	Accuracy
m/s (meters per sec)	0.40 to 25.00 m/s	0.01 m/s	±2% of full scale
ft/min (feet per minute)	125 to 4900 ft/min	1 ft/min	±2% of full scale
Air Flow Measurements	Range	Resolution	Area
CMS (cubic meters per sec.)	0.01 to 99.99 m ³ /sec	0.01	0 to 9.999 m ²
CFM (cubic feet per minute)	1 to 9999 ft ³ /min	1.0	0 to 9.999 ft ²
Air Temperature	Range	Resolution	Accuracy
	32 to 122 °F (0 to 50 °C)	0.1 °F/°C	±1.5 °F (0.8 °C)