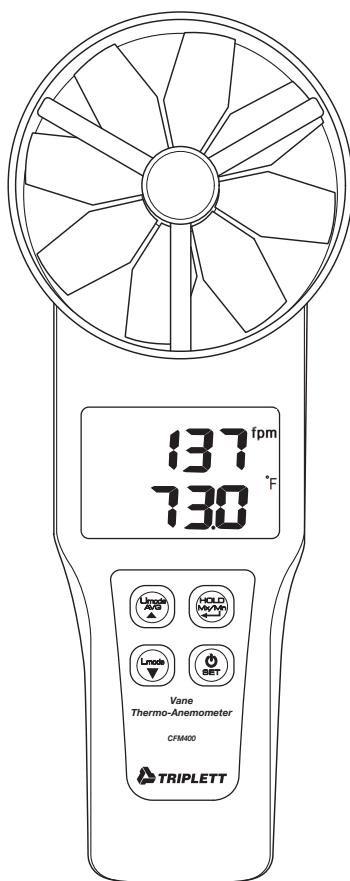


CFM400

Large Vane CFM/CMM Thermo-Anemometer



INTRODUCTION

Thank you for choosing the Triplet CFM400 Large Vane CFM/CMM Thermo-Anemometer. This professional instrument is designed to provide accurate measurements of air velocity, air flow (CFM/CMM), and air temperature for a wide range of applications, including HVAC system installation and maintenance, cleanrooms, kitchen exhaust systems, wind power monitoring, construction, sailing and boating, vehicle aerodynamics, and more. Featuring a large 4" (100mm) vane sensor, a dual backlit LCD for clear, easy-to-read measurements, Min/Max and averaging functions, Data Hold, and automatic power-off with disable, the CFM400 delivers the performance, convenience, and reliability professionals need for precise airflow analysis.

To ensure safe operation and obtain the best performance from your meter, please read this manual thoroughly before use and retain it for future reference.

What's in the box:

- CFM400 Anemometer
- 4 × AAA batteries
- User Manual
- Hard carrying case

Stay updated:

For the most recent version of this user manual, visit www.triplett.com and search for "CFM400". You can also find the latest specifications, FAQs, and product datasheets on our website.

SAFETY



Use the meter only as specified in this manual; otherwise, the protection provided by the meter and its warranty may be voided.

- Inspect the meter for damage before each use. Do not use if damage is found.
- Keep the meter out of the reach of children. It contains parts that may present a choking hazard. Batteries and packaging materials may also be hazardous.
- Remove the batteries if the meter will not be used for an extended period to prevent battery leakage.
- Leaking or damaged batteries can cause injury if they come in contact with the skin. Wear protective gloves when handling damaged or expired batteries.
- Do not short-circuit, disassemble, or dispose of batteries in fire.

Operating Environmental Conditions

This product can be used indoor and outdoor but is not waterproof.

- Altitude: ≤2000 meters
- Relative Humidity: 80%RH max
- Operating Temperature: 32 to 122°F (0 to 50°C)

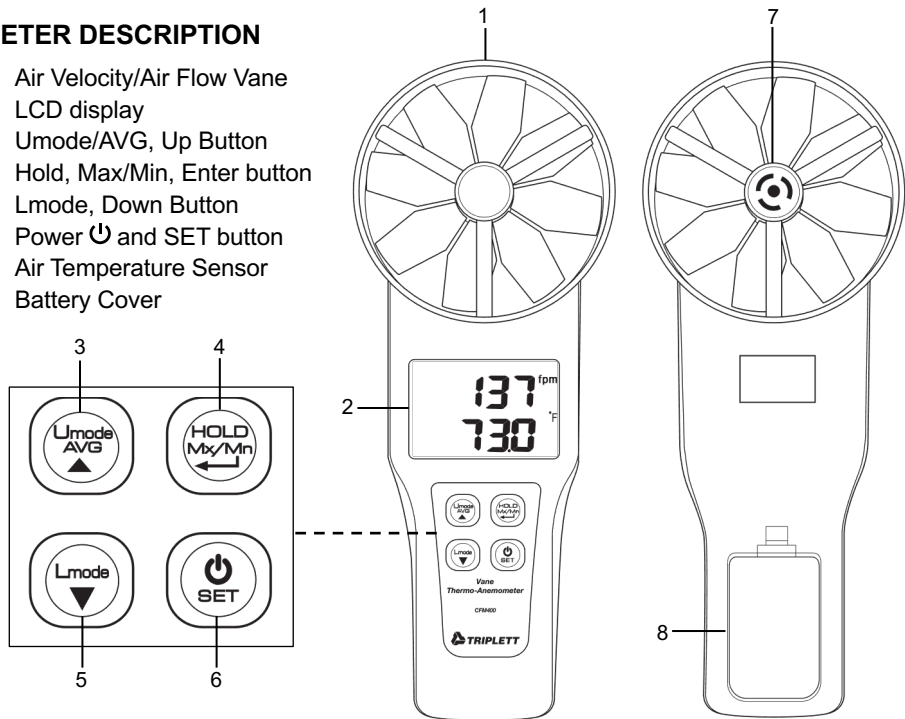
Maintenance and Cleaning

- Servicing not covered in this manual should be performed only by qualified personnel. Visit www.triplett.com/support for support.

- Periodically wipe the housing with a dry cloth. Do not use abrasives or solvents.
- If product gets wet, dry it off immediately with a soft cloth. Do not touch or rub the sensor on back of the vane.

METER DESCRIPTION

- Air Velocity/Air Flow Vane
- LCD display
- Umode/AVG, Up Button
- Hold, Max/Min, Enter button
- Lmode, Down Button
- Power  and SET button
- Air Temperature Sensor
- Battery Cover

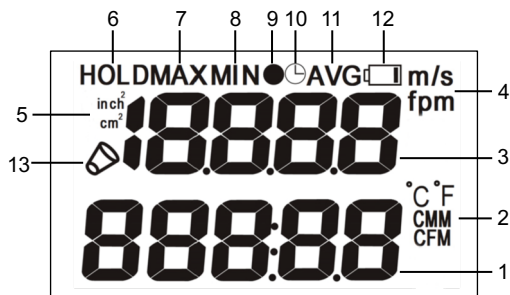


BUTTON DESCRIPTION

Button	Description	
	- Press to power ON or OFF. - Press and hold ~2 seconds to enter the Setup mode for Units and Area.	
	- Press to turn on backlit display for a few seconds. - Press and hold to enter the Multi-point Average and Timed-Average modes. - When in the Setup mode, press to toggle between Area and Unit settings. - Press to increase the value during setup modes.	
	- Press to toggle between Air Volume and Air Temperature readings - Press to save set value during setup modes.	
	- Press to Hold the reading on the display. Press again to release. - Press and hold ~2 seconds to view the recorded Minimum readings. Press and hold again to view the recorded Maximum readings. Press and hold to exit.	
		Meter is defaulted to auto power off after ~20 minutes of inactivity. In OFF position, press and hold both buttons to disable Auto Power Off.

LCD DESCRIPTION

1. Lower Display (Air Volume, Temperature, Timer, or Menu Parameter)
2. Lower Display Units
3. Upper Display (Air Velocity or Menu Parameter)
4. Upper Display Units
5. Area Units
6. HOLD – Data Hold
7. MAX – Maximum readings
8. MIN – Minimum readings
9. Recording indicator
10. Elapsed Timer icon
11. AVG – Average readings
12. Low battery alert
13. Optional Cone adapter in use indicator



OPERATION

Power and Auto Power Off

1. Install batteries first (see Battery Installation section) and press  to power ON and OFF.
2. The meter will automatically power off after 20 minutes of inactivity. To disable this feature, turn the meter OFF.
3. Press and hold both the  and **Umode** buttons until “n” appears on the top right of the display. Release the buttons.
4. The meter will stay ON until you manually press  to turn it OFF.

Unit selection

1. Display is defaulted to metric units (m/s, CMM, °C) when first powered ON or saved units from last operation.
2. If metric units are displayed, to switch to imperial units (fpm = ft/min, CFM, °F), press and hold the SET button until **Unit P1.0** appears.
3. Press the HOLD button and **Unit P1.1** and all the metric units will appear.
4. Press the Down ▼ or Up ▲ arrow button to toggle between the imperial and metric units.
5. Press the HOLD button to save unit selection. It will bring you back to **Unit P1.0**.
6. To exit the unit setup menu, hold down the SET button. It will take you to the measurement mode.
7. If the Air Volume measurement is required, see the Area Size Setup section first before exiting this menu.

Air Velocity

1. Hold the vane sensor directly in the air stream with the back of the vane facing the direction of the airflow and the LCD display facing you. Keep the sensor perpendicular to the airflow. Avoid tilting the sensor or it may reduce accuracy.
2. Do not block the vane with your hand, body, or other objects. Allow air to flow freely through and around the sensor.
3. Position the vane in the center of the air stream and hold the meter steadily.
4. Wait for the vane to reach a steady rotation speed and for the displayed reading to stabilize before recording the measurement.
5. For fluctuating airflow, use the meter's MAX/AVG or Data Hold functions to capture or retain representative readings over time.

Temperature

Air temperature is measured from the sensor located on the rear side of the Vane.

1. In the measurement mode (Air Velocity and Air Volume), press the **Lmode** button to toggle between Air Temperature and Air Volume values.
2. Face the sensor to the target area to obtain a more accurate reading.

Area Size Setup and Optional Cone Adapters

For Air Volume to measure properly, the Area size information must be entered first. If you just setup the preferred units and the current display is **Unit P1.10**, you can skip this first step and jump to step 2.

1. From the measurement mode, press and hold the SET button until **Unit P1.0** appears.
2. Press **Lmode** button and **Area P2.0** appears.
3. Press the **HOLD** button to display 'ArEA.' The lower display will show '99999' with the first digit on the left flashing. If the duct area value is not available, see Area Calculation section to help determine the value.
4. Press the Up arrow to change the digit value and press the down arrow to save and move to the next digit. Repeat until the Area value is displayed.
5. Press the **HOLD** button to save the Area value and return to **P2.0** screen.
6. Press and hold SET button until the screen returns to the measurement mode.
7. If the bottom reading shows temperature, press the **Lmode** button to switch to Air Volume mode.
8. Hold the meter vane perpendicular to the air stream (rear of the vane faces the air flow while the display faces you) to measure the air volume.
9. Optional Cone attachment adapters are available (Triplett CFM400-C includes a round and square cone adapters). Once attached, the meter will automatically sense the adapter, and a cone icon will appear on the display. NOTE: The manual set Area setting will be ignored if using a cone adapter. The meter will default to the vane opening dimensions instead. The adapter must be locked in securely before taking measurements.

MAX/MIN Recall

The meter will automatically track the highest (MAX) and the lowest (MIN) readings from when the meter is turned ON.

1. Press and hold MAX/MIN button until MIN appears on the top row of the display. The values below show the lowest readings. Press **Lmode** to toggle between Air Volume and Temperature.

2. Press and hold MAX/MIN button again until MAX appears. The values below display the highest readings.
3. To exit, press and hold MAX/MIN to return to the measurement mode.

Multi-point Average Mode

1. From the measurement mode, press and hold the **Umode** button until you see '● **AVG**' on top of the display.
2. While measuring, press the HOLD button to record a reading. You will see 1 displayed on the top row. This is used as a memory location. Each press will record the measurement and tag the number location. Max memory is 19,999 number location recordings.
3. To view the Multi-point Average (Mean) from the recorded sessions, press the Umode button and the '● **AVG**' icons will flash
4. Press the **Lmode** button to view the average of the other parameters.
5. To exit and return to the measurement mode, press the Umode button.

Timed-Average Mode

1. From the measurement mode, press and hold the **Umode** button to enter the Multi-point Average mode '● **AVG**' and then press **Umode** button again to enter the Timed-Average Mode '⌚**AVG**'.
2. Press the HOLD button to begin recording. The timer will start counting on the upper display while the clock icon flashes. Max time count is 19,999 seconds.
3. Press **Umode** to stop the time count. The AVG icon will flash. The upper display shows the elapsed time while the lower display shows the averaged reading from all the recorded values.
4. Press **Lmode** button to view averaged readings for other parameters.
5. To exit and return to the measurement mode, press the **Umode** button.

Data Hold Feature

To assist in reading the measurement on the display during an obstructive viewing angle, press the HOLD button to freeze the current readings. HOLD icon will appear. Press the button again to release and resume measurement mode.

Backlit Display Feature

To facilitate reading the display in dimly lit areas, press the **Umode** button. Backlight will stay on for ~10s. Other button presses will also turn on the backlight.

AREA CALCULATION

Use the equations and conversion table to help calculate the area of the duct. Measurements must be in feet or meters before using the formulas provided.

Area for Rectangular/Square Ducts

Area (A) = Width (W) × Height (H)

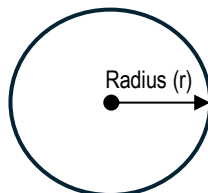
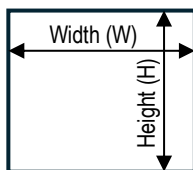
Area for Circular Ducts

Area (A) = $\pi \times r^2$; $\pi = 3.14$, $r^2 = r \times r$

Cubic Equations

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

CMM (m³/min) = Air Velocity (m/s) × Area (m²) × 60



Unit Conversion Table

UNITS	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

SPECIFICATIONS

Function	Range	Resolution	Accuracy
m/s (meters/second)	0.2 to 30.00 m/s	0.01 m/s	± (1.5% rdg + 0.3 m/s)
fpm (feet/minute)	40 to 5900 fpm	1 fpm	± (1.5% rdg + 59 fpm)
CMM (cubic m/min)	0 to 99999 m³/min	0.1 to 9999.9; 1.0	Area range: 0 to 99999 cm²
CFM (cubic ft/min)	0 to 99999 ft³/min	0.1 to 9999.9; 1.0	Area range: 0 to 99999 in²
Air Temperature	-4 to 140°F (-20 to 60°C)	0.1°F/°C	± 1.1°F (-5 to 122°F); ± 2.2°F (123 to 140°F) ±0.6°C (-20 to 50°C); ±1.2°C (51 to 60°C)
General Specifications			
Display	Dual function 0.5" (13mm) 4- digit LCD		
Sampling rate	1 reading per second approx.		
Air velocity/flow sensor	Conventional angled vane arms with low-friction ball bearing		
Temperature sensor	NTC-type precision thermistor		
Automatic Power off	Auto shut off after 20 minutes to preserve battery life (sleep mode)		
Operating Temperature	32°F to 122°F (0°C to 50°C)		
Storage Temperature	14 to 122°F (-10 to 50°C)		
Operating Humidity	<80% RH		
Storage Humidity	<90% RH		
Operating Altitude	2000 meters (7000ft) maximum		
Battery Power (Life)	4 × AAA 1.5V batteries (>40 hours battery life)		
Battery consumption	8.3 mA DC (approx.)		
Weight	725g (1.6 lbs.) including battery and probe		
Dimensions	Meter: 10.6 × 4.2 × 2" (269 × 106 × 51mm); Vane inner diameter: 3.94" (100mm) Optional Air Flow Adaptors: Round cone: 8.3" (210mm); Square: 13.6 × 13.6" (346 × 346mm)		

ERROR MESSAGES

Air Temperature

- **E02:** Temperature is below the specified range. Place the meter at room temperature for 30 minutes. If E02 persists, contact Triplet for service.
- **E03:** Temperature exceeds the specified range. Place the meter at room temperature for 30 minutes. If E03 persists, contact Triplet for service.
- **E31:** A/D converter error. Contact Triplet for service.

Air Velocity

- **E03:** Air velocity exceeds the specified range. Test the meter using a known air velocity within the specified range. If E03 persists, contact Triplet for service

Air Volume

- **E03:** Reading exceeds display range. Verify that the AREA setting is correct in Setup Mode.
- **E04:** Air velocity error. If the error persists, contact Triplet for service.

Other Errors

- **E32:** Memory IC error. Restart the meter and retest. If E32 persists, contact Triplet.

No Display

- Check the polarity of the batteries installed and that they are all making good contact.
- Replace the batteries.

Display Shuts OFF Automatically

The meter may be operating in normal Sleep Mode, which automatically turns the meter off after 20 minutes of inactivity. If the meter is not in Sleep Mode, check whether the low-battery indicator appears when the LCD attempts to turn ON. If it does, replace the batteries.

BATTERY INSTALLATION/REPLACEMENT & DISPOSAL

1. Meter should be OFF. Remove the battery cover from the back of the meter and install the batteries or replace out the old batteries with new ones.
2. When the low battery icon  appears, replace all the batteries immediately.
3. Observe correct polarity when snapping in each battery.
4. Align the battery cover in place to close it securely.

Battery Disposal



- Never dispose used batteries in household wastebin.
- As consumers, users are legally required to take used batteries to a collection site or stores that sell batteries.
- Never dispose of batteries in a fire. Batteries may explode or leak.
- Never mix battery types. Always install the same type.

CERTIFICATIONS



This product complies with applicable CE requirements, is RoHS compliant, and has been tested to applicable IEC standards.

WARRANTY

Triplet offers warranty to the original purchaser of its products. We guarantee that our products will be free from defects in workmanship and materials for two (2) years from the purchase date.

This warranty does not cover:

- Products purchased from unauthorized distributors.
- Items that have been repaired or altered by unauthorized individuals.
- Damage from misuse, abuse, misapplication, negligence, or accidents.
- Products with altered, defaced, or removed serial numbers.
- Accessories, including batteries.

For product support, registration, FAQs, or to request calibration or repair services, visit www.triplett.com/support.

*Imagery is for reference and may be enhanced for clarity. Actual product appearance and screen content may vary slightly.
Specifications are subject to change without notice. For the latest information, visit www.triplett.com.*

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