



# Model 471B Digital Thermo Anemometer

## Specifications and Operating Instructions



The Model 471B Digital Thermo Anemometers are versatile dual function instruments that quickly and easily measure air velocity or volumetric flow plus air temperature in imperial or metric units. High contrast LCD display shows both selected readings simultaneously. Convenient backlight provides perfect visibility in low light conditions. Light automatically shuts off after 2-1/2 minutes to prolong battery life. Low battery warning is included. Stainless steel probe with comfortable hand grip is etched with insertion depth marks from 0 to 8 inches and 0 to 20 cm. Extruded aluminum housing fully protects electronics, yet is lightweight and comfortable to hold even when taking multiple readings as part of duct traverses. Up to 99 readings may be stored for later retrieval. An integral sliding cover protects sensors when not in use. Items included with the 471B are 9 volt alkaline battery, sensing probe, wrist strap and custom carrying case.

### Battery Installation

The unit is shipped with a separate 9 volt alkaline battery which must be installed before operation. Remove the two screws holding the bottom endcap in place and remove it. Connect the battery to the enclosed battery clip, observing correct polarity. Be careful not to trap the wires between the case or foam pad which retains the battery. This could make it difficult to install the battery or remove it later for replacement. Be sure the rubber gasket is properly seated in the gasket channel and replace the endcap. Note that the endcap will only fit one way because the holes are slightly off-center. Place the "Z" shaped wrist strap clip in one of the screw recesses and replace the screws. Do not overtighten. Attach the wrist strap to the clip.

When battery replacement becomes necessary, use only 9 volt alkaline type batteries such as a Duracell® MN1604, or Eveready® 522 or equivalent. Zinc-carbon types, often labeled Heavy-Duty, are not recommended because of their shorter life and an increased potential for leakage. Alkaline batteries are a better value because they last typically up to three times longer in this device.

### Low Battery Indicator

A weak battery may cause improper operation or inaccurate measurements. A low battery indicator (  ) is provided on the display to show when the battery needs to be replaced. Although the unit may appear to function and read properly, the accuracy of the readings cannot be guaranteed when the (  ) indicator is empty of power segments. Replace the battery with a fresh one. Do not leave an exhausted battery in the unit due to potential battery leakage.

**NOTICE** The side of the probe with dot should face the flow.



### SPECIFICATIONS

- Service:** Air velocity and temperature of clean, dry air.
- Temperature Limits:**
  - Process Air Velocity: -20 to 212°F (-29 to 100°C);
  - Process Temperature: -40 to 212°F (-40 to 100°C);
  - Ambient: 5 to 125°F (-15 to 51°C).
- Display:** 4.5 digit LCD.
- Resolution:** 0.1%, 0.1°F/°C.
- Range Air Velocity:** 0 to 6000 FPM (0 to 30 m/s).
- Accuracy Air Velocity:** ±3% FS within temperature range of 40 to 90°F (4 to 32°C).
- Range Volumetric Air Flow:** 19,999 in selected flow units.
- Range Temperature:** -40 to 212°F (-40 to 100°C).
- Accuracy Temperature:** ±0.5°F (±0.28°C) from 32 to 122°F (0 to 50 °C); ±1.5°F (±0.83°C) from -40°F to 32°F (-40 to 0°C) & 122 to 212°F (50 to 100°C).
- Probe Length:** 8" (203 mm) insertion.
- Cable Length:** 28" (71 cm) retracted, 6 ft (183 cm) extended.
- Power Requirements:** 9V alkaline battery included.
- Weight:** 16 oz (454 g).
- Agency Approvals:** CE, RoHS.

### OPERATING INSTRUCTIONS



Single press turns unit on. Second press turns unit off. While unit is on, hold for 2 seconds for backlight. If light active, push once to turn light off, another to turn unit off.



Single press freezes current reading. Second press resumes live process reading.



Single press to display menus. Hit MENU while in a main menu to go back to home process screen or if in sub menus to back up one level.



In menu-mode, enters sub-menus or values. Press and hold for 4 seconds to clear MAX, MIN or MEM in their respective menus. In home process screen cycles through displayed values.



Single press to retrieve stored memory. Each successive press will scroll to the next saved memory location ST01, ST02 etc. In menu mode, it becomes the UP button.



Single press to store process reading. ST01, ST02 etc shows in display to indicate the memory location where a reading was saved. In menu mode, it becomes the DOWN button.

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## HOLD



HOLD will appear on the home screen when the **HOLD** button is pressed, indicating the process reading has been frozen.

## Memory Storage and Retrieval



From the home screen, push **MEMORY/UP** to view all previously stored values. Cycle up or down through the stored data with the **MEMORY/UP** or **STORE/DOWN** buttons. From the home screen, press **STORE/DOWN** to store data points to memory. For both data storage and data memory retrieval, press **MENU** to return to the home screen.

## MENUS

### Maximum



Push **ENTER** to see the maximum recorded reading. When viewing the maximum recorded reading, hold **ENTER** for 4 seconds to clear. Push **MEMORY/UP** or **STORE/DOWN** to cycle through parameters.

### Minimum



Push **ENTER** to see the minimum recorded reading. When viewing the minimum recorded reading, hold **ENTER** for 4 seconds to clear. Push **MEMORY/UP** or **STORE/DOWN** to cycle through parameters.

### Average



Press **ENTER** to view the AVG function. This function will adjust the process reading on the home screen to report the average reading over the period of selected time. Press **MEMORY/UP** or **STORE/DOWN** to select between 0, 10, 30, or 60 second values. Push **ENTER** to store the desired value.

## Memory



Press **ENTER** to see DEL. Hold **ENTER** for 4 seconds to clear all stored memory locations.

## Engineering Units



Press **ENTER** to see current engineering units. Press **MEMORY/UP** or **STORE/DOWN** to select another unit.

## Area



Press **ENTER** to view the current duct shape setting. **REC** for rectangular or **CIRC** for circular will appear. To alter between the two, push the **MEMORY/UP** button or **STORE/DOWN** buttons. If a circle duct shape is selected, press **ENTER** to see **DIAM** the diameter value. If rectangle is chosen, **ENTER** will allow adjustment of the **XDIM** and **YDIM** of the duct. A numeral position will blink indicating it can be adjusted with the **MEMORY/UP** or **STORE/DOWN** buttons. Hit **ENTER** to store a value.

**Note:** In metric mode dimensions will be displayed in mm. Inches will be the value when using imperial units.

## Power Management



Push **ENTER** to see current time off setting. Select 30 or 10 values indicating minutes for power to automatically shut-off. By selecting 0, the auto shut-off is disengaged and the unit will only turn off manually by the **ON/OFF/LIGHT** button.

## MAINTENANCE/REPAIR

Upon final installation of the Model 471B, no routine maintenance is required. The Model 471B is not field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.

## WARRANTY/RETURN

Refer to "Terms and Conditions of Sales" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.