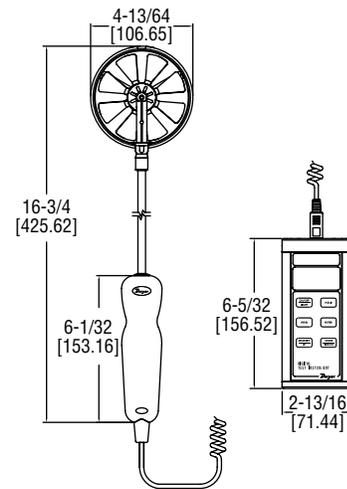




# Model 473B 100 mm Vane Thermo-Anemometer Test Instrument

## Specifications - Installation and Operating Instructions



The **MODEL 473B** 100 mm Vane Thermo-Anemometer Test Instrument is a versatile unit that quickly and easily measures air velocity or volumetric air flow, as well as air temperature and humidity in imperial or metric units. A stainless steel 100 mm vane probe is included, which has a comfortable hand grip. The extruded aluminum housing fully protects electronics, yet is lightweight and comfortable to hold.

### SPECIFICATIONS

**Service:** Dry, clean air.

**Temperature Limits:** Process: -20 to 212°F (-29 to 100°C); Ambient: 5 to 125°F (-15 to 51°C)

**Display:** 4.5 digit backlit display.

**Range:** Air velocity: 40 to 5000 fpm (0.2 to 25 m/s); Volumetric air flow: 19,999 in selected flow units; Temperature: -20 to 212°F (-29 to 100°C); Relative humidity: 0 to 100% RH.

**Accuracy:** Air velocity:  $\pm 1.5\%$  of reading  $\pm 20$  fpm ( $\pm 0.1$  m/s) [0.25 to 10 m/s];  $\pm 1.5\%$  of reading  $\pm 40$  fpm ( $\pm 0.2$  m/s) [10 to 20 m/s];  $\pm 1.5\%$  of reading  $\pm 60$  fpm ( $\pm 0.3$  m/s) [20 to 25 m/s]; Temperature:  $\pm 0.54^\circ\text{F}$  @  $77^\circ\text{F}$  ( $\pm 0.3^\circ\text{C}$  @  $25^\circ\text{C}$ ); Relative Humidity:  $\pm 2\%$  @  $77^\circ\text{F}$  ( $25^\circ\text{C}$ ) [10 to 90% RH];  $\pm 4\%$  [0 to 10, 90 to 100% RH].

**Response Time:** Air velocity: 1 s; Volumetric air flow: 1 s; Temperature: 1.5 s; Relative humidity: 1.5 s.

**Probe Length:** 8" (203 mm) insertion.

**Cable Length:** 28" (71 cm) retracted; 6' (18.3 m) extended.

**Vane Material:** Anodized aluminum.

**Power Requirements:** 9 V alkaline battery, installed non-functional, user replaceable.

**Weight:** 18.4 oz (521 g).

**Agency Approvals:** CE.

### BATTERY INSTALLATION

The unit is shipped with a separate 9 V 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 and the 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 V alkaline type batteries such as Duracell® MN1604, 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.

### OPERATING INSTRUCTIONS

#### ON/OFF/LIGHT

A single press turns unit on, and a second press turns unit off. While unit is on, hold for 2 seconds to turn on the backlight. If the light is active, press once to turn the light off and another to turn the unit off.

#### HOLD

A single press freezes the current reading and a second press resumes live process reading.

#### MENU

A single press will display the menu. Hit MENU while in the main menu to go back to the home screen or while in the sub-menus to back up one level.

#### ENTER

When in the home screen, press to cycle through temperature, dew point, wet bulb, air velocity, and flow. While in the menu, press to enter sub-menus or values. Press and hold for 4 seconds to clear MAX, MIN, or MEM in their respective menus.

#### MEMORY/UP

A single press will retrieve stored data points in the memory. Each successive press will scroll to the next saved memory location ST01, ST02, etc. While in the menu, it becomes the UP button.

#### STORE/DOWN

A single press will store the current reading on the screen. ST01, ST02, etc. shows in the display to indicate the memory location where the reading was saved. While in the menu, it becomes the DOWN button.

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## AIR VOLUME/HUMIDITY/DEW POINT/WET BULB DISPLAY



In the home screen, press **ENTER** to cycle through temperature, dew point, wet bulb, humidity, air velocity, and flow. The primary reading of volume, flow, or humidity will remain on the top.

## HOLD



**HOLD** will appear on the home screen when the **HOLD** button is pressed, indicating the process readings have 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 the 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, 30, or 60 second values. Push **ENTER** to store the desired value.

## Memory



Press **ENTER** to see CLr. 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 ClrCL 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.

## Factory Restore



This function allows the user to restore the unit to factory settings. Press **ENTER** to view the restore function. CLr will be shown on the display. Press and hold **ENTER** for 4 seconds until CLrI is displayed. The unit will then be restored to factory defaults.

## MAINTENANCE/REPAIR

Upon final installation of the Model 473B-1, no routine maintenance is required. The Model 473B 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.

This product uses FreeRTOS ([www.FreeRTOS.org](http://www.FreeRTOS.org)) version 7.0.1. A copy of the original Free RTOS source shall be provided upon request.