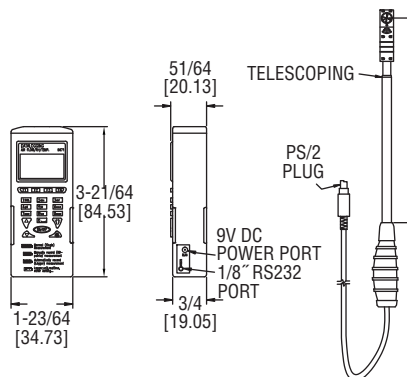




## Model VT-300 Miniature Vane Thermo-Anemometer

### Specifications - Installation and Operating Instructions



	"L"
Retracted	11-27/32" (301 mm)
Extended	18-1/4" (946 mm)

The **Model VT-300 Miniature Vane Thermo-Anemometer** measures air velocity, air volume, temperature, and humidity inside air ducts. This meter includes a telescoping vane probe that is only 0.7" (18 mm) in diameter that allows duct traverse measurements up to 20" ducts. User-selectable units include ft/min, m/s, knots, mph, and km/hr. The vane probe has a built-in sensor to record temperature in °F or °C, as well as humidity in %RH. There are three modes which include viewing data in real time, manual recording, and automatic recording. Model VT-300 can store measurements that can later be transferred to a PC via RS-232 communication. The vane probe is detachable for easy replacement, if necessary, or as an addition to Model 9671. Each unit is supplied with a hard carrying case, batteries, logging software CD, USB to RS-232 cable and instruction manual.

#### BATTERY INSTALLATION

Model VT-300 requires (4) AAA batteries for use. To install or replace batteries, open the back compartment and remove the current batteries, if applicable. Insert new batteries, being aware of correct polarity.

The battery icon will appear on the LCD when the power is low and the batteries will need to be replaced.

#### METER SETTING

Before measuring, check the meter setting to confirm that the basic settings of the meter are what is needed (change them if necessary). To enter the settings function from the welcome screen, press F4 (SET).

To change settings:

1. Press the arrow buttons to shift between the variable settings.
2. Press F2 (EDIT) to enter modification mode. If the setting changes using numbers, press the corresponding number on the keypad.
3. Press F4 (NEXT or BACK) to enter the next or previous page.
4. Press F1 (EXIT) to return to the main menu.

#### SPECIFICATIONS

##### AIR VELOCITY

**Range:** 98.4 to 3937 ft/min (0.5 to 20 m/s).

**Accuracy:** ±3% of reading + 0.2 m/s.

**Resolution:** 0.1 m/s.

**Response Time:** 1 s.

##### TEMPERATURE

**Range:** -4 to 140°F (-20 to 60°C).

**Accuracy:** ±1°F (±0.6°C) from -4 to 122°F (-20 to 50°C); ±2.2°F (±1.2°C) from 122 to 140°F (50 to 60°C).

**Resolution:** 0.1°F (0.1°C).

**Response Time:** 60 s (typ).

##### RELATIVE HUMIDITY

**Range:** 0.1 to 99.9% RH.

**Accuracy:** ±3% RH at 25°C (10 to 90% RH); ±5% RH (0.1 to 10% RH, 90 to 99.9% RH).

**Resolution:** 0.1% RH.

**Response Time:** 60 s (typ).

##### AIR VOLUME

**Range:** 0 to 99,999 (CFM or m<sup>3</sup>/s).

**Resolution:** 0.1 (0 to 9999.9) or 1 (10,000 to 99,999).

##### WET BULB

**Range:** -7.6 to 158°F (-22 to 70°C).

**Resolution:** 0.1°F (0.1°C).

##### METER

###### Temperature Limits:

Operating: 32 to 122°F (0 to 50°C);

Storage: -4 to 122°F (-20 to 50°C).

###### Humidity Limits:

Operating: <80% RH;

Storage: <90% RH.

**Display:** 1 x 1.8" (26 x 45 mm).

**Serial Communications:** 9600 bps, 8 data bits, no parity.

**Power Requirements:** (4) AAA 1.5 V alkaline batteries, included, user replaceable.

**Battery Life:** 100 hours.

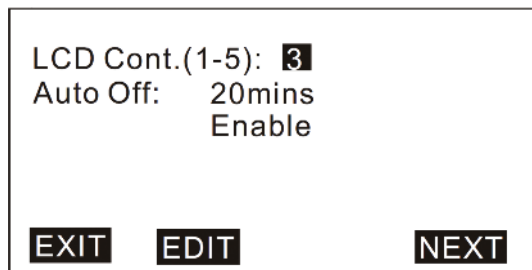
**Vane Diameter:** 0.7" (18 mm).

**Weight:** 7.41 oz (210 g).



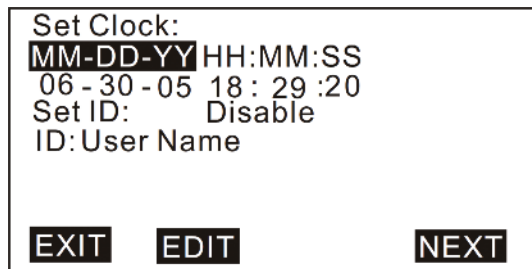
On the display menu, the variable settings are:

- LCD Brightness: 5=brightest
- Auto Off Function: selectable from 1 to 20 min; Auto Off is also enabled/disabled from this screen.



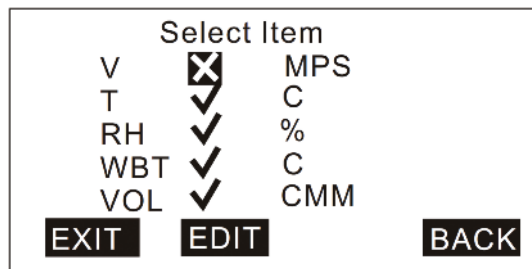
On the settings menu, the variable settings are:

- Date/Time Format: Choose MM-DD-YY, DD-MM-YY, or YY-MM-DD and set the date and time.
- ID: Enable/disable the use of an ID and set the ID.



On the logging menu, the user can choose which items the meter will record and which unit will be used. The available units are:

- Air Velocity (V): MPH, MPS, FPM, KNT, KMH
- Temperature (T): °C, °F
- Relative Humidity (RH): %
- Wet Bulb Temp (WBT): °C, °F
- Air Volume (VOL): CFM, CMM



**OPERATION**

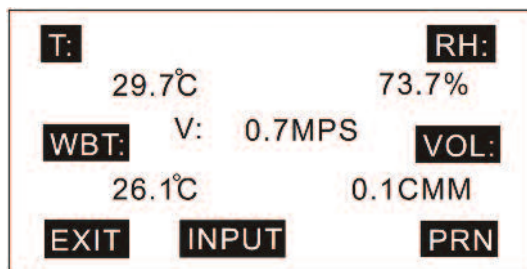
There are three measurement modes:

1. Single Measurement (MEAS)
2. Manual Logging (MEM)
3. Automatic Logging (LOG)

**Single Measurement**

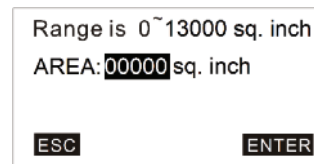
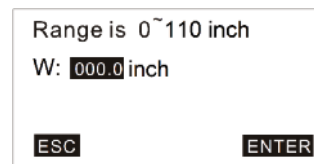
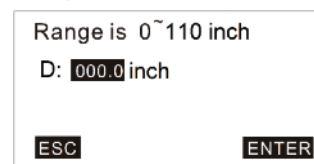
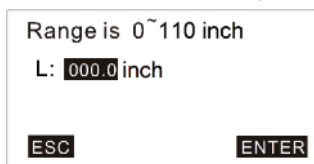
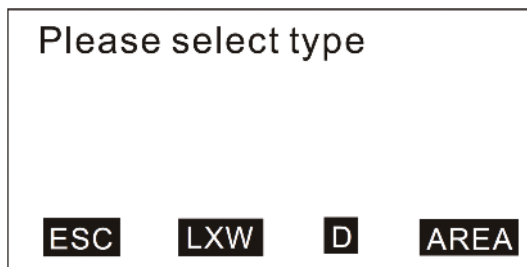
The single measurement setting allows for measurement without recording any memory. To get to this setting:

1. Turn on the meter.
2. Press F1 (MEAS).
3. Hold the vane probe in the area being measured.



In this setting, it is also possible to calculate air volume. To do this from the single measurement screen, press F2 (INPUT). This screen gives three options of how to input the area.

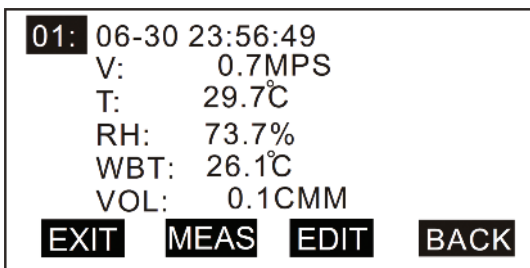
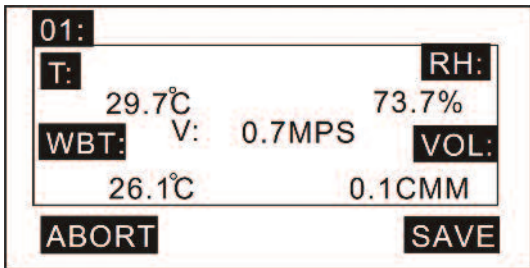
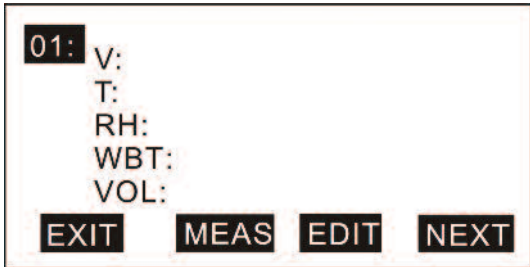
1. For a rectangular area, press F2 (LXW) and input the length and width of the area.
2. For a circular area, press F3 (D) and input the diameter of the area.
3. If the exact area is known or can be approximated, press F4 (AREA) and input the area manually.



**Manual Logging**

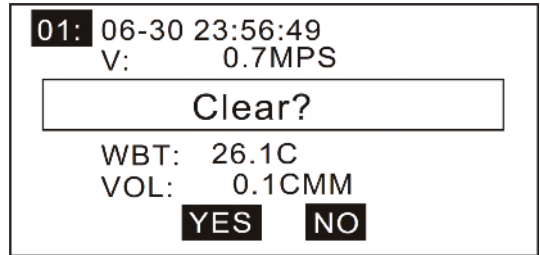
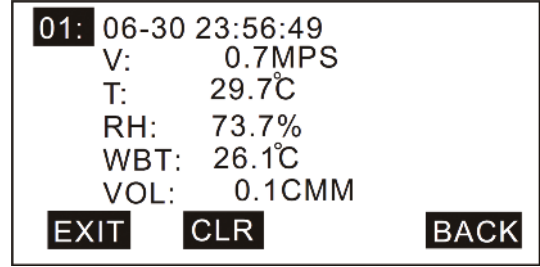
The manual logging setting allows for the user to manually record up to 99 data points. To get to this setting:

1. Turn on the meter.
2. Press F2 (MEM).
3. Press F2 (MEAS) to measure the data.
4. Press F4 (SAVE) to save the measurement or F1 (ABORT) to exit the measurement.
5. To edit the file name of the recorded value, press F3 (EDIT). Press the number keys until the required character is highlighted, then press the next key and repeat until the file name is complete.
6. To view other recorded values, press the arrow keys to move between measurements.



To delete data measurements:

1. Press F2 (CLR) briefly to delete one data point, or press and hold F2 (CLR) to delete all data points.
2. Press F2 (YES) to confirm deletion.

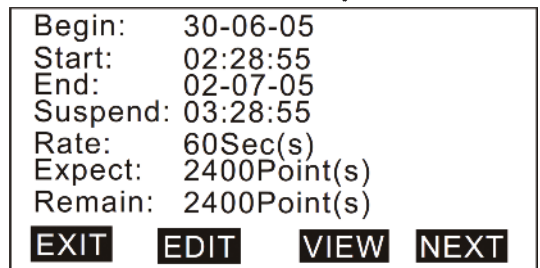
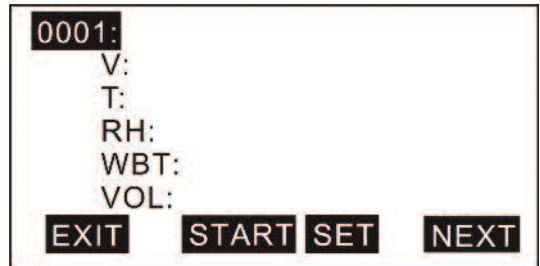


**Automatic Logging**

The automatic logging setting allows for the meter to automatically record based on the user's pre-set functions. These functions include start and stop time and date, and sample rate. This setting allows memory for 2400 points.

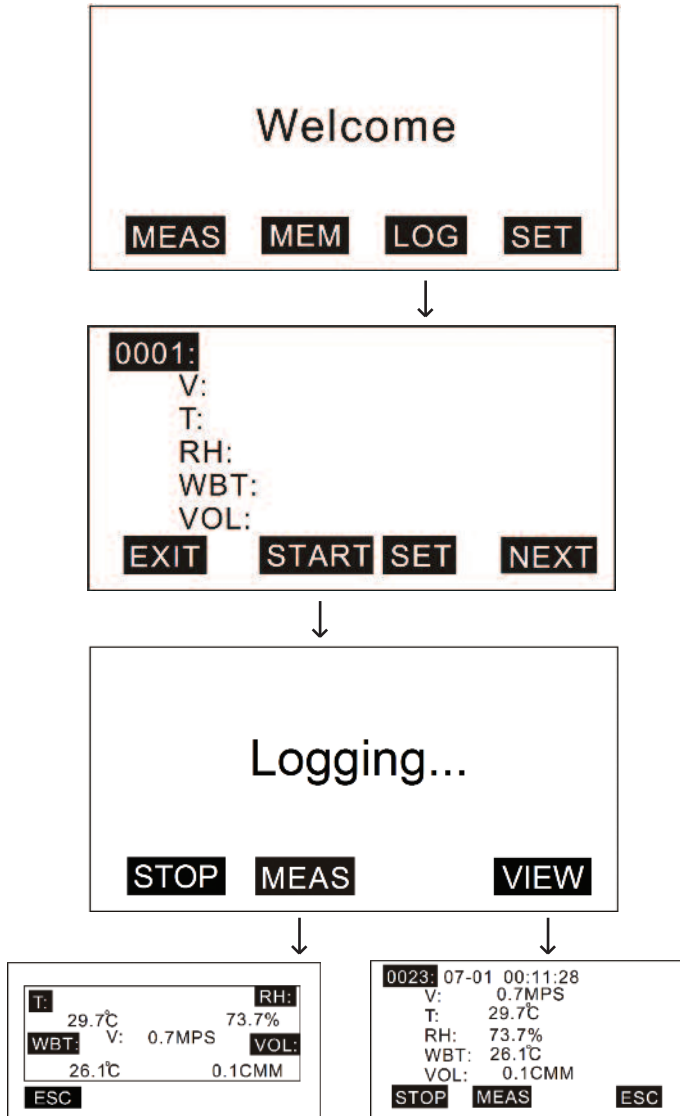
To change logging settings:

1. Press F3 (LOG).
2. Press F3 (SET).
3. Use the arrow keys to move between the settings and find the setting needed to be changed.
4. Press F2 (EDIT).
5. Use the number keys to change the values and press F4 (ENTER) to change between sections of one setting.
6. When done, press F4 (ENTER).

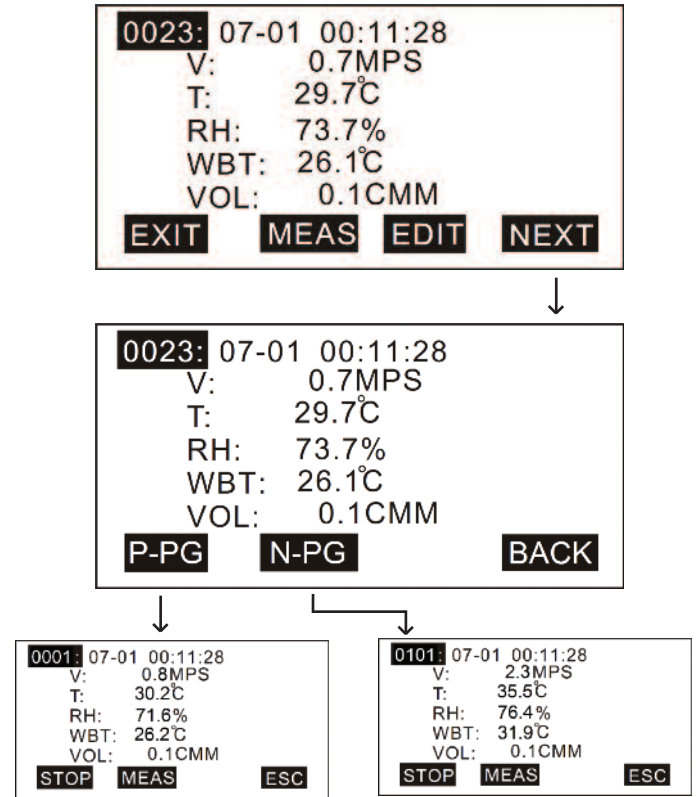


To start logging after the logger has been set up:

1. From home screen, press F3 (LOG).
2. Press F2 (START).
3. While logging, press F2 (MEAS) to see what the measurements are in real time, or press F4 (VIEW) to see the specific data points.
4. To stop logging, press F1 (STOP).



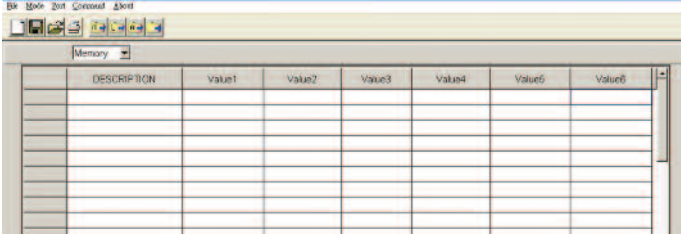
To see the recorded data points, press F4 (NEXT). Then press F1 (P-PG) to review the previous 100 points or F2 (N-PG) to review the next 100 points. Use the arrows to view each point individually.



## SOFTWARE

The included software is a quick tool for downloading recorded data to a PC for further analysis. The software requires Windows® 98/2000/NT/XP or newer.

To download software, insert the included CD into the PC's CD drive. When prompted, run the "autorun.exe" program. Click on the "Install Software" button and follow the on-screen instructions to complete software installation. While on the main menu of the CD, connect the meter to the computer using the supplied USB to RS232 cable. Click on the "Install USB Driver" button, then on the next screen, click on the button for the operating software being used. Follow the on-screen instructions to complete USB driver installation.



In the software, there are 4 drop-down menus at the top of the page:

### File

- New: To create a new file.
- Load: To open a saved file.
- Save: To save the current file.
- Save As: To save the current file as a new file name.
- Print: To print logging data, memory data, or both.
- Exit: To exit the software.

### Mode

- Memory: This displays recorded data from the manual logging setting.
- Logger: This displays the recorded data from the automatic logging setting. 100 data points can be viewed at one time. Use the drop down bar in the top center of the screen to change between ranges.

Users can also use the drop down bar near the top right to change between reading the memory and logger modes.

### Port

Select the correct Com port to ensure the meter is communicating correctly with the PC. For most PCs, the Com port number is Com 1, but there are 8 Com ports for selection in the software. While the meter is connected to the PC, "PC Mode" will appear on the LCD of the meter and "Com #" and "Edit" will show in the bottom left corner of the software screen.

### Command

- Download Memory Data: Download the measured logging data (from manual logging setting) from the meter to the PC.
- Download Logger Data: Download the measured memory data (from automatic logging setting) from the meter to the PC.
- Download All Data: Download the measured memory and logging data from the meter to the PC.
- Upload Memory Description: Upload pre-edited file names from the PC to the meter.

To edit the file names, double-click the mouse over the name needing to be changed, then the cursor will flash to indicate that the column is ready for editing.

### NOTICE

Before uploading or downloading, make sure to choose the correct download mode. If "Download Memory Data" is chosen, but "Download Logger Data" is executed, the mode will need to be switched to have the correct display.

## TROUBLESHOOTING

If any problems occur while using Model VT-300, refer to the below table to find possible solutions.

Problem	Solution
The meter has been powered on, but the display is not shown.	Make sure to hold the power button for more than 200 ms.
	Check that the batteries are placed at the correct polarity and have good contact.
	Remove the batteries for 10 seconds and then replace. Replace old batteries with a new set.
The display disappears.	Check whether the low battery indicator is displayed before the display disappears. If so, replace the batteries.

If an error message appears on the display, refer to the below table to see what each error message means.

Error Code	Problem
E2	The meter value is under the recordable range.
E3	The meter value is above the recordable range.
E4	A calculated source value has occurred.

## MAINTENANCE/REPAIR

Upon final installation of the Model VT-300 Miniature Vane Thermo-Anemometer, no routine maintenance is required. The Model VT-300 is not field serviceable and is not possible to repair the unit. Field repair should not be attempted and may void warranty.

## WARRANTY/RETURN

Refer to "Terms and Conditions of Sale" 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.

