

Digital Air Velocity/Flow Meter

556



The Value Leader™
www.tpi-thevalueleader.com

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Introduction

Thank you for purchasing TPI brand products. The 556 Digital Air Velocity Meter is a state of the art, easy to use instrument designed to provide temperature and air velocity readings as well as calculating CFM. The instrument is ruggedly constructed and comes with a 3 Year Guarantee.

This manual will guide you through the functions of the TPI 556 which will give you many years of reliable service.

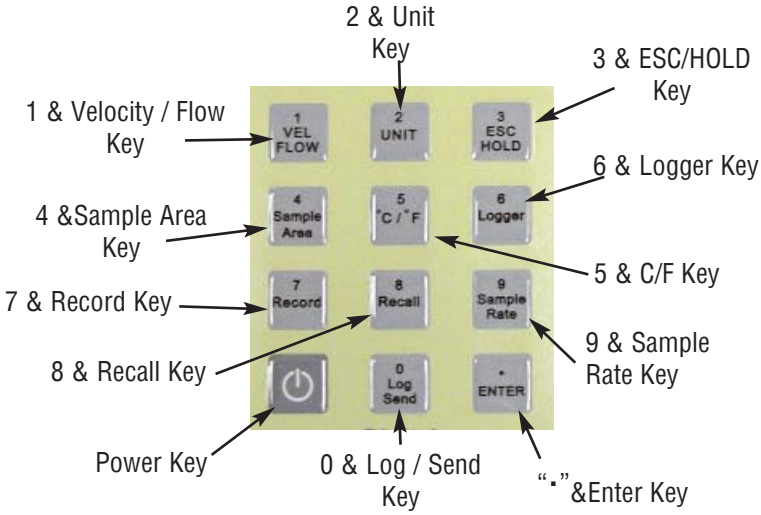
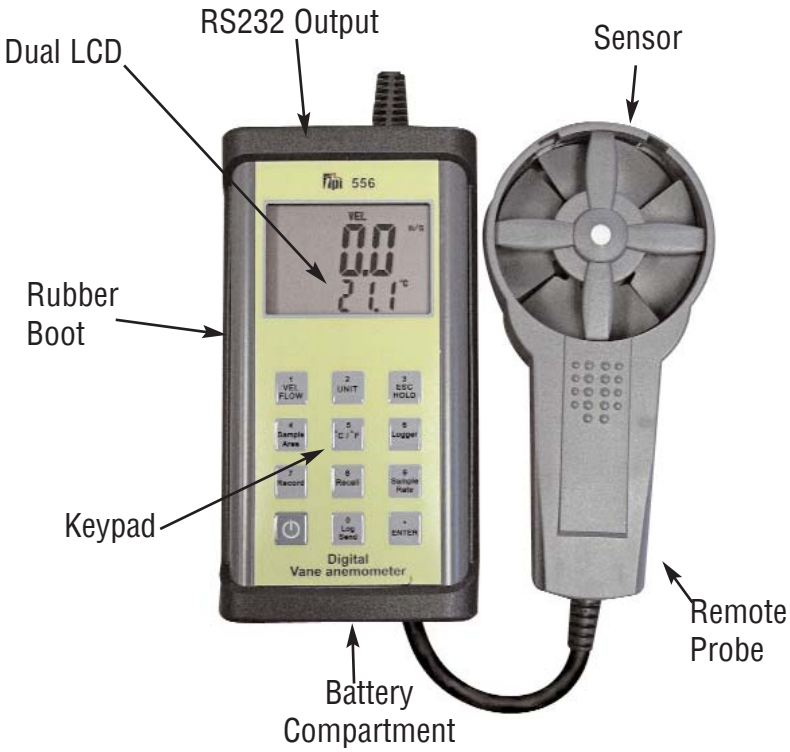
Your TPI 556 Digital Air Velocity Meter comes complete with the following items as standard:

- TPI 556 Instrument
- Rubber Boot
- Soft Carrying Case
- Batteries
- Instruction Manual

Your TPI 556 Digital Air Velocity Meter has the following options available:

- Serial Computer Interface RS232

Instrument Overview



Operating Instructions

Air Velocity Measurement

1. Push Power button to meter on.
2. Pressing °C/°F button will toggle between °C and °F
3. Press VEL/FLOW button to display “VEL”
4. Press UNIT button to select the desired display units of air velocity.
5 units: “m/s”, “km/h”, “knots”, “ft/min”, “mile/h”
5. Position the probe at the desired location of measurement.
6. Read the velocity and temperature on the display.
7. Press the ESC/HOLD button to freeze the display after taking a measurement is finished. “DH” will be displayed on the LCD.
8. Press the ESC/HOLD button again to return to normal operation.
9. If you want to record the reading changes, press the RECORD button when the reading gets stable. The “REC” symbol will be displayed. The meter will record the minimum, maximum and average readings.
10. To recall the data after recording, press the RECALL button. The “MAX”, “MIN”, “AVG” values will be recalled sequentially.
11. If you press the RECORD button again, the unit will return to normal operation mode.

Air Flow Measurement

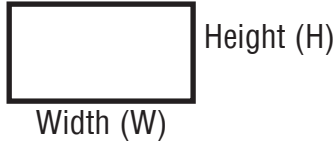
1. Push the POWER button to turn meter on.
2. Pressing °C/°F button will toggle between °C and °F
3. Press VEL/FLOW button to display “FLOW”
4. Press UNIT button to select the desired units of airflow: “CFM or CMM”
5. In order to get a correct Air Flow reading it is required to input the sample area. The area is either measured by ft² or m²

Air Flow Measurement Continued

6. Measure the area to be measured and calculate the square footage or square meters.

Area equation for Rectangular Ducts:

$$\text{AREA (A)} = \text{Height (H)} \times \text{Width (W)}$$

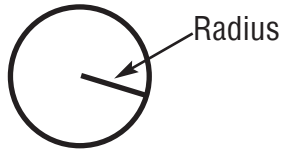


Common Rectangular Duct Sizes with Area

| DUCT SIZE (Inches) | AREA (sq.ft) |
|-----------------------|-----------------|
| 8" X 10" | 0.444 |
| 8" X 10" | 0.556 |
| 8" X 12" | 0.667 |
| 8" X 14" | 0.778 |
| 8" X 15" | 0.833 |
| 8" X 16" | 0.889 |
| 8" X 18" | 1.000 |
| 8" X 20" | 1.111 |

Area equation for Round Ducts:

$$\text{AREA (A)} = 3.14 \times (\text{Radius} \times \text{Radius})$$



Common Round Duct Sizes with Area

| DUCT SIZE (Inches) | AREA (sq.ft) |
|-----------------------|-----------------|
| 4" | 0.087 |
| 5" | 0.136 |
| 6" | 0.196 |
| 7" | 0.267 |

7. Press the **SAMPLE AREA** button, the earlier measured area will be displayed. The left digit on the LCD will be flashing
8. If the calculated area is 1.00, press the numeric button 1 followed by the decimal button followed by the numeric key for 0, 0, 0. Then press the **ENTER** button. The enter button will only work when all four digits are entered. "1.000" will be displayed on the lower part of the display after the input has been completed.
9. Position the probe at the desired location for measurement.
10. Read the flow on the display, it will take several minutes until the readings get stable after the probe is positioned.
11. Press the **ESC/HOLD** button to freeze the display after taking a measurement is finished. "DH" will be displayed on the LCD.
12. Press the **ESC/HOLD** button again to return to normal operation.
13. If you want to record the reading changes, press the **RECORD** button when the reading gets stable. The "REC" symbol will be displayed. The meter will record the minimum, maximum and average readings.

14. If you want to record the reading changes, press the RECORD button when the reading gets stable. The “REC” symbol will be displayed. The meter will record the minimum, maximum and average readings and 2/3V MAX.
15. “2/3V MAX” indicates 2/3 of the maximum value of the measured flow reading.
16. To recall the data after recording, press the RECALL button. The “MAX”, “MIN”, “AVG”, “2/3V MAX” values will be recalled sequentially.
17. If you press the RECORD button again, the unit will return to normal operation mode.

**The 556 has auto power off feature
on normal mode operation (10 minutes)
Auto power off is disabled in record mode.**

**Battery should be replaced when
“LBT” is displayed at the top left of the screen.**

Logger Functions

1. This function logs the reading to be measured during Air Velocity and Air Flow measurements.
2. You can download the real-time data to be measured if you connect the meter and the PC through RS-232.
3. Pressing the LOGGER button will display “Log” on the main display and “on” on the sub display. Pressing the ENTER button will activate this function.
4. This function transfers and also records data at real-time.
5. The meter records 1000 readings automatically. If there are more than a 1000 readings the meter will stop automatically.
6. If the meter is turned off, measurements will be lost.

7. If you want to stop or disable the Logger function, press the LOGGER button again and press the ENTER button again when “Log” and “off” are displayed. If you want to download this stored data to the PC again, connect them with the RS232. You can download all of the measurements in the hyperterminal at one time.
8. You can use this function by pressing the LOG SEND button.
9. If you pressed a button when you did not want to, press the ESC button to cancel the operation ie. If logger button is pressed during logger operation and “off” Mode is selected, press the ESC button to continue logger function without disabling the Logger function.

Sample Rate Function

1. This function is to set the sampling time of the data to be measured during the Logger function.
2. Time setting is from 1 to 999 seconds.
3. This function is used for both Air Velocity and Air Flow.
4. Pressing the SAMPLE RATE button will display the old rate in the last digit on the main display, the first digit will be flashing and “rAtE will be flashing on the lower display.
5. Press the numeric keys to enter the desired sampling time and then press the ENTER button to complete the setting.

SPECIFICATIONS

| | |
|-----------------------------|--|
| Operating Temperature Range | 0°C to 50°C (32°F to 122°F) |
| Operating Humidity | Less than 80% non-condensing RH |
| Battery | 9V Alkaline battery |
| Battery Life | >30 hours Continuous use |
| Display | Dual LCD with function annunciators |
| Dimensions | 148 x 73 x 30 mm (Main Instrument) 70 x 145 mm (Vane) |
| Casing | Rubber Boot as standard |
| Switch Off | Automatic Power off after 10 minutes |

SENSORS

| Measurement | Range | Resolution |
|-------------|---------------------------------|------------|
| m/s | 0.4 - 30.0 | 0.1 |
| km/h | 1.4 - 108.0 | 0.1 |
| mile/h | 0.9 - 67.08 | 0.1 |
| knots | 0.8 - 58.32 | 0.1 |
| ft/min | 80 - 5916 | 1 |
| Accuracy | ±2% of reading, +3 digits | |
| | m/s = meters per second | |
| | km/h = kilometers per hour | |
| | mile/h = miles per hour | |
| | knots = nautical miles per hour | |
| | ft/min = feet per minute | |

| | | |
|---------|-----------------------------|-------|
| CFM/CMM | 0 - 999900 | 0.1 |
| Area | 0.001 - 9999 | 0.001 |
| | CFM = cubic feet per minute | |
| | CMM= cubic meter per minute | |

| | | |
|-------------|---------------------------|-----|
| Temperature | -20°C to 80°C | 0.1 |
| | -5°F to 175°F | 0.1 |
| Accuracy | ±1% of reading, +3 digits | |

Calibration & Service

It is recommended that your instrument be calibrated every 12 months. Please consult Test Products International for further details.

Guarantee

Your TPI 556 Digital Velocity/Air Flow Meter is guaranteed free from defects in materials and workmanship for 3 Years from the date of purchase.

Covered by TPI: - Repair parts and labour; or replacement of the product at the option of TPI. Normal transportation charges to the purchaser are also covered.

Not covered by TPI: - Damage to the product which are the result of abuse, improper use or maintenance are not covered. Any other expenses, consequential damages, incidental expenses including damages to property are not covered. Transportation expenses to the customer are not covered.

To obtain warranty performance: - Include with the product your name, address, phone number, written description of the problem and proof of purchase date. Carefully package and return to TPI.

This guarantee does not affect your statutory rights.

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