

TURBO METER™

**ELECTRONIC WIND SPEED INDICATOR
INSTRUCTIONS**


The Turbo Meter provides uncommon accuracy, sensitivity, and pocket-size convenience. It is based on the principal that a freely turning turbine will rotate at a speed directly proportional to the wind speed. To insure maximum sensitivity and accuracy, the turbine is suspended on sapphire jewel bearings, and its rotation is sensed by an infrared light beam, which adds no friction. The resulting signal is processed electronically by a LSI (Large Scale Integrated) circuit for improved reliability and reduced size. A special three digit display is used for extra resolution and provides excellent viewing contrast in bright sunlight. A handy switch selects between four different scales for unmatched versatility. Also, the totally enclosed turbine and compact size make it easy to carry, so you always have it when you need it.

Directions for Use


1. For best results, select a position away from buildings, trees, and other obstructions that cause wind turbulence.
2. Move the slide switch to the desired scale. Refer to Fig. 1. It will take about 4 seconds before the correct wind speed is shown in the display window. If there is not enough wind to make the turbine rotate, the display will read either 000 or 001.
3. Determine the approximate wind direction from the way flags, clouds, kites, windsocks, etc. are moving. Hold the Turbo Meter so that the wind will pass through it as shown in Fig. 2. For best results try to keep the axis of the turbine within 20° of the direction of the wind.

Reading the Display

1. The three digit display is calibrated so that the far-right digit ALWAYS represents the "tenths" place. A raised decimal point is engraved on the case as a reminder.

Example: If the display shows  it should be read as 4.8.

2. The "knots" scale is shared with the "feet per minute" (FPM) scale. The "knots" scale is read directly and FPM is obtained by multiplying the display reading by 100.

Example: If the display shows  it could be read as either 24.6 knots or 2460 FPM (24.6 X 100).

3. The "knots (FPM X 100)" scale is factory calibrated to read in "FPM". A small built-in error of 1.3% results when the knots scale is read. The error is due to the fact that the true conversion factor from "knots" to "FPM" is 101.3. Therefore the "knots" readings are always 1.3% high. For applications where this much error is unacceptable, the "knots" reading can be multiplied by .987 to give the true wind speed.

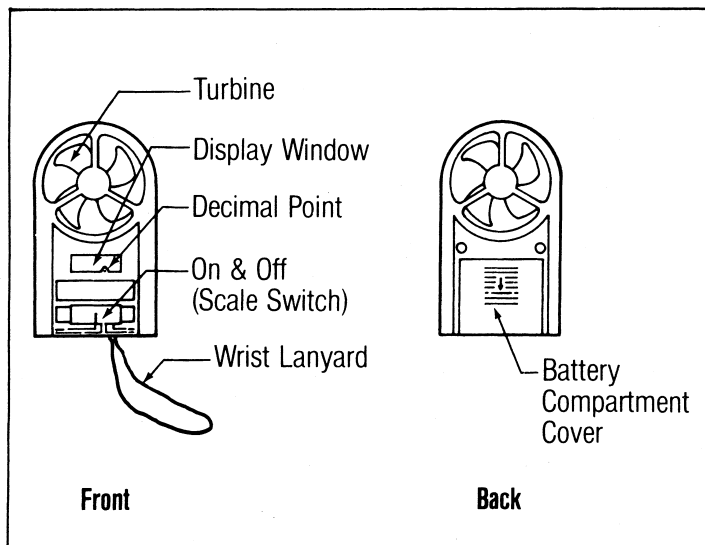


Figure 1

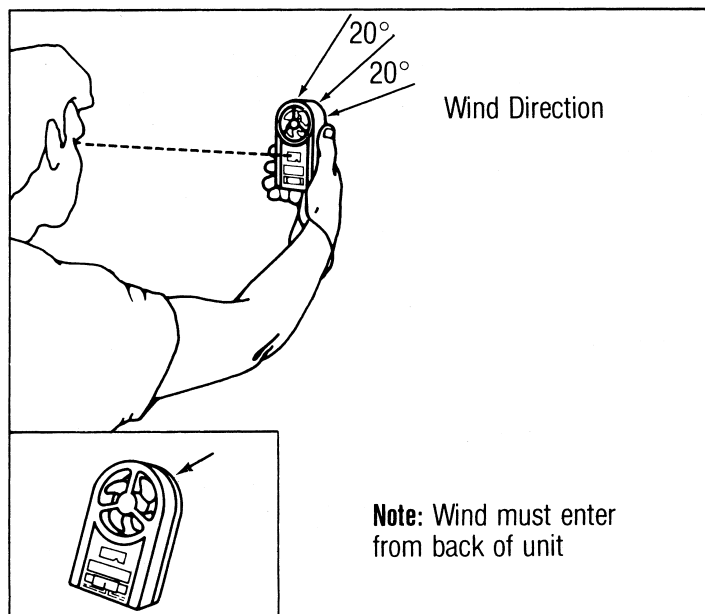


Figure 2

Maintenance

The Turbo Meter requires no regular maintenance other than proper storage in a clean, dry location. Occasionally the red display window may need to be cleaned. Use only a soft cloth and tap water. Chemical cleaners or solvents should not be used because they may cloud the window. The Turbo Meter has been designed to be reasonably shock and weather resistant. Like any quality instrument, it will give the best results if some care is used to avoid dropping it or letting water enter the case. If water does get into the case it should not be turned on again until dry. In the event of salt water immersion, the unit should be IMMEDIATELY and THOROUGHLY rinsed in fresh water and then allowed to completely air dry. Do not use an external heat source to dry, as it may warp the plastic parts. Make sure battery contacts are free of corrosion. Clean occasionally with wire brush or sandpaper.

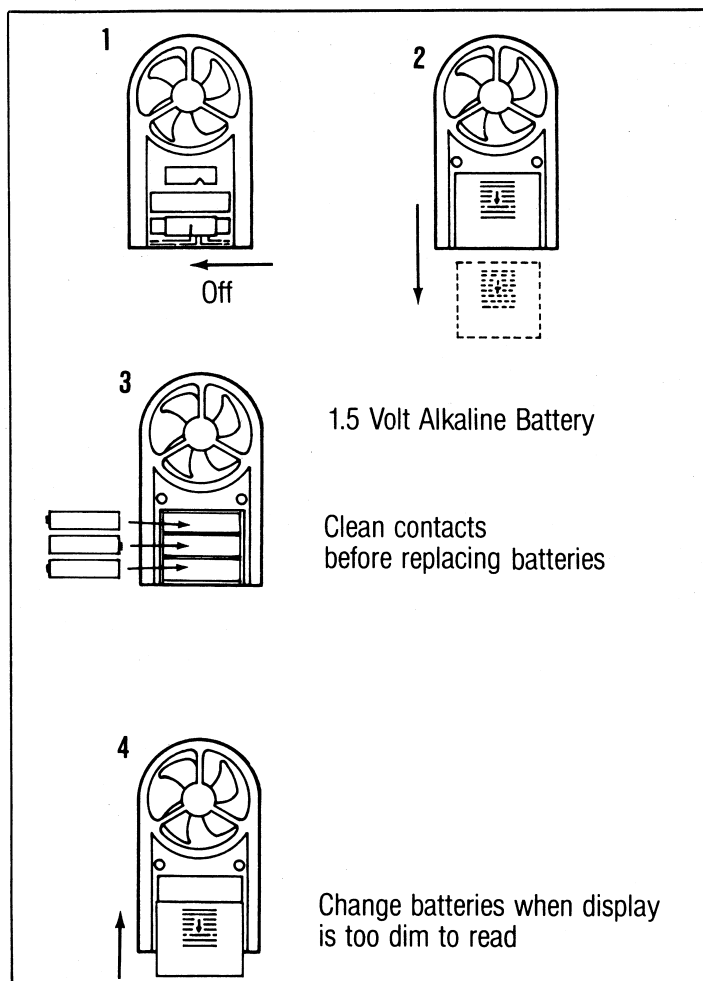
Specifications

Size (H x W x L)	1.16" x 2.6" x 4.65" (29.5mm x 66mm x 118mm)
Weight (Without Batteries)	3 oz 85 g
Operating Temperature	32° to 122°F (0° to 50°C)
Storage Temperature	-40° to 140°F (-40° to 60°C)
Battery Type	1.5 volt AAA, Alkaline Type (3 required)
Battery Life	Typically 7 hours (intermittent service)
Bearing Type	Sapphire Jewel Bearings
Averaging Period for Wind Speed Measurement	
Knots (FPM)	1 1/2 seconds
Meters Per Second	3/4 seconds
Miles Per Hour	1 5/8 seconds

SCALE	RANGE	RESOLUTION	THRESHOLD	ACCURACY (% of Reading)
Knots	0-87.9	0.1 Knots	0.9 Knots	+4% -2% or* ± 0.1 Knot
Feet Per Minute	0-8790	10 FPM	90 FPM	± 3% or* ± 10 FPM
Meters Per Second	0-44.8	0.1 m/s	0.5 m/s	± 3% or* ± 0.1 m/s
Miles Per Hour	0-99.9	0.1 MPH	1 MPH	± 3% or* ± 0.1 MPH

* Whichever is greater

Battery Replacement



Auto Power-Off Feature

The Turbo Meter automatically switches OFF after five minutes if there is no wind speed being displayed, and if the Scale Switch hasn't been moved. Slide the Scale switch to a different position to turn it back ON.

Factory Overhaul. Contact Davis Instruments if you would like to have your TurboMeter overhauled.

Davis Instruments

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