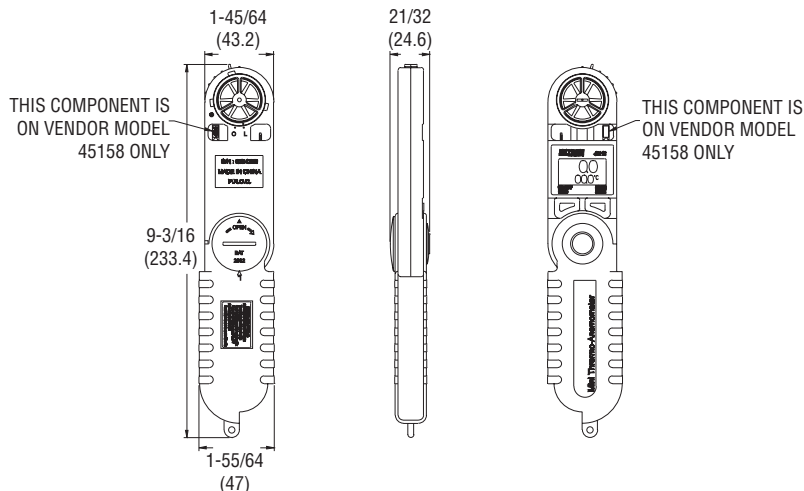




Model 45158 Pocket Weather Meter

Specifications - Installation and Operating Instructions



Measure wind speed, temperature, windchill, humidity, dew point, and % RH with the Model 45158 Pocket Weather Meter. Measuring modes and display units can be changed at any time. All functions are controlled with two buttons. The 45158 displays maximum, average, and current wind speed in knots, meters per minute, and Beaufort scales. Quickly select temperature measurement in °F or °C. The compact, rugged weather meter is water resistant, and the unit also features automatic shut-off. Similar to the standard wind meter, the 45158 also offers data hold, detailed instruction manual, protective plastic housing, tripod-mounting connection, and a water resistant housing that floats. Accessories include a spare battery and a 43" lanyard.

METER DESCRIPTION



- 1. Vane impeller
- 2. Impeller set screw (on rear of meter)
- 3. Relative Humidity sensor
- 4. Temperature sensor
- 5. LCD display
- 6. ON/OFF/HOLD key
- 7. UNITS/MODE key
- 8. Battery compartment (on rear)
- 9. Tripod mounting hole
- 10. Lanyard (neckstrap)

SPECIFICATIONS

Air Velocity Range: 100 to 5500 ft/min, 0.5 to 28 m/s, 2 to 100 km/h, 1 to 62 mph, 1 to 54.3 knots, 1 to 17 Beaufort.

Temperature/Wind-chill Ranges: 0 to 122°F (0.1°)/-18 to 50°C (0.1°).

Relative Humidity: 10% to 95% (model 45158 only).

Accuracy:

Wind speed: ±3% of reading.

Temperature: ±1.8°F/±1°C.

Relative Humidity: ±5% RH.

Air Velocity Units: m/s; mph; knots; km/hr; ft/min; Beaufort.

Resolution: 0.2 mph.

Sample Time: 1 reading per second.

Averaging: 5, 10, or 13 second intervals.

Water-resistant: to 3 ft (1 meter).

Wind Speed: Limits: 0.5 to 89 mph.

Power: Lithium battery (CR-2032 or equivalent) 400 hour life expectancy, replaceable.

Auto-off: 30 minutes after last key is pressed.

Impeller: Plastic, replaceable.

Case: Plastic.

Weight: 3 oz (95 g).

Agency Approval: CE.

Range Specifications:

Measurement	Range	Resolution	Accuracy
mph (miles/hour)	1.1 to 62.5 mph	0.2 mph	±(3%rdg+0.4 mph)
Km/hr (kilometers/hour)	1.8 to 100.6 km/h	0.7 km/h	±(3%rdg+1.4km/h)
Knots (nautical miles/hour)	1.0 to 54.3 knots	0.3 knots	±(3%rdg+0.6knots)
m/sec (meters/second)	0.5 to 28 m/s	0.1 m/s	±(3%rdg+0.2m/s)
ft/min (feet/minute)	100 to 5500 ft/min	20 ft/min	±(3%rdg+40ft/min)
Beaufort force	1 to 17	1 BF	±1
Temperature	0 to 122°F (-18 to 50°C)	0.1°F/C	±1.8°F (±1°C)
Relative Humidity	10 to 95%	1%	±5% RH
Dew Point	32 to 122°F (0 to 50°C)	0.1°F/C	±3.6°F (±2°C)

OPERATION

Turning the meter ON and OFF

- Press the ON/OFF/HOLD button to turn the meter ON.
- Press and hold the ON/OFF/HOLD buttons for approx. 3 seconds to turn it OFF.
- The meter's Auto Power OFF feature turns the meter OFF after 10 minutes of inactivity.

Change the lower display parameter

- With the meter ON, press and hold down the ON/OFF/HOLD button.
- While continuing to hold the ON/OFF/HOLD button, press the UNITS/MODE button repeatedly to step through Temperature (°F/°C), Humidity (RH%), Dew Point (TD) & Temperature with windchill factor (WCI). Note that the center display is Air Velocity.

Change the Air Velocity unit of measure

- Turn the meter OFF. Press and hold down both buttons until the display turns on and begins blinking then release both buttons.
- Press the UNITS/MODE button repeatedly to step through the units (see specs for list).
- After 5 seconds the meter switches back to normal operation mode automatically.

Select temperature units (°C or °F)

- Turn the meter OFF first. Press and hold down both buttons until the display turns on and begins blinking then release the buttons.
- Press both buttons momentarily to change temperature units.
- After 5 seconds the meter switches back to normal operation mode automatically.

Taking Measurements

- Position the meter so that the airflow enters the meter vane from the rear of the meter (opposite side of front panel logo). A tripod mount is located on the bottom of the meter.

Max Hold

- Max Hold represents the highest measurement taken since the meter was turned on.
- Press the UNITS/MODE button to display the Max reading (MAX icon appears).
- Press the UNITS/MODE button repeatedly to step through to the normal operating mode.

Average mode

- 5 or 10 reading averages can be displayed in the Average Mode.
- Press UNITS/MODE 3 times for 5 reading averages or 4 times for 10 readings.
- To exit this mode, press the UNITS/MODE button until the icons on the left disappear.

Data Hold

- Data Hold freezes the most recent displayed reading.
- Press and hold the ON/OFF/HOLD button to activate Data Hold.
- As long as the ON/OFF/HOLD button is held the reading will remain on the LCD.

BATTERY REPLACEMENT

If the meter will not power up as usual or the display contrast becomes weak and difficult to read, replace the lithium battery. To do so, turn the battery compartment cover in a CLOCKWISE direction to remove it. The battery will be visible in the battery compartment, observe the position of the battery and replace the new one in the same position. Affix the battery compartment cover by turning it in a COUNTER-CLOCKWISE direction. Dispose of the lithium battery in accordance with local, state, or national waste disposal codes.

VANE IMPELLER REPLACEMENT

Note: The anemometer is very accurate at low and mid-range air speeds. Constant use at very high speeds may damage the

impeller's bearing and reduce over-all accuracy.

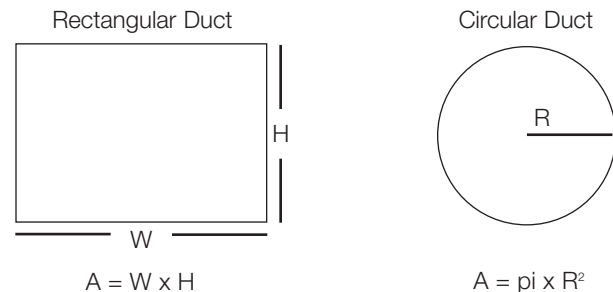
To replace impeller, remove the set screw next to the impeller assembly (on the rear or the meter). Twist the impeller assembly counter-clockwise to the "O" (open) position and remove it. Install the new impeller by inserting and twisting the new impeller assembly clockwise then tighten the screw.

MAINTENANCE

Upon final installation of the Model 45158 Mini Thermo-Anemometer and the companion receiver, no routine maintenance is required. A periodic check of the system calibration is recommended. The Model 45158 is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

CFM MEASUREMENTS

Measure the duct area using the diagrams that follow (use inches rather than feet when calculating the area). Plug the area value, in inches, into the cubic equations below. Note that the air velocity must be plugged into the cubic equations also.



Cubic Equations

CFM (ft³/min) = Air Velocity (ft/min) x Area (ft²)

CMM (m³/min) = Air Velocity (m/sec) x Area (m²) x 60

Units Conversion Table

	m/s	ft/min	knots	Km/h	mph
1 m/s=	1	196.87	1.944	3.6	2.24
1 ft/min=	0.00508	1	0.00987	0.01829	0.01138
1 knot=	0.5144	101.27	1	1.8519	1.1523
1 km/h=	0.2778	54.69	0.54	1	0.6222
1 MPH=	0.4464	87.89	0.8679	1.6071	1

Beaufort Conversion Table

Beaufort	Km/h	mph	Knots	Meter/Sec
0	<1	<1	<1	0-0.2
1	1-5	1-3	1-3	0.3-1.5
2	6-11	4-7	4-6	1.6-3.3
3	12-19	8-12	7-10	3.4-5.4
4	20-28	13-18	11-16	5.5-7.9
5	29-38	19-24	17-21	8.0-10.7
6	39-49	25-31	22-27	10.8-13.8
7	50-61	32-38	28-33	13.9-17.1
8	62-74	39-46	34-40	17.2-20.7
9	75-88	47-54	41-47	20.8-24.4
10	89-102	55-63	48-55	24.5-28.4
11	103-117	64-72	56-63	28.5-32.6
12 (-17)	above 117	above 72	above 63	above 32.6