

## Introduction



Thank you for selecting the Extech 45168CP. This instrument measures Wind Speed, Temperature, RH%, Dew Point, Wet Bulb, and Wind Chill. The built-in 360° Compass also provides wind direction readings. Features include delta ΔT (Air Temp. minus Dew Point), MAX/AVG wind speed, Auto Power Off, and water resistant housing.

## Operation

### Opening the Meter

Swivel the meter out from its protective case to a maximum 180 degree angle. Use a 45 degree angle for tripod use (tripod mount on bottom of meter). Close the meter when not in use.

### Turning the meter ON and OFF

- Press the  button to turn the meter ON
- Press and hold the  button to turn the meter OFF
- Auto Power OFF (APO) turns the meter OFF after 5 minutes of inactivity. To disable APO: With power OFF, press and hold both buttons until 'n' appears.
- If the meter does not switch ON, please check the battery.

### Select the Mode of Operation and the Unit of Measure

- With the meter ON, use the MODE (M) button to step: Wind speed > MAX wind speed > 10 sec. AVG wind speed > compass > air temperature > wind chill (WCI) > relative humidity (%RH) > wet bulb (WBT) > dew point (DP) > ΔT.
- In the Air Temperature mode, press the UNIT button to select °F or °C.
- In the Wind Speed mode, use the UNIT button to select unit of measure.

### Wind Speed Measurement Notes

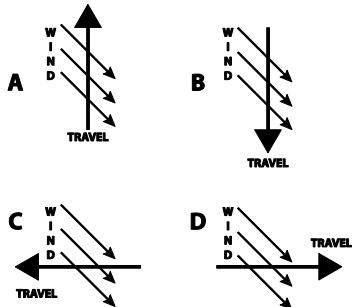
Position the meter so that the airflow enters the meter vane from the rear of the meter. A tripod mount is located on the bottom of the meter for convenience.

### Compass and Wind Direction (head/tail/cross) Modes

- Switch the meter ON and select the Compass mode
- Point meter in the direction of travel and read the heading on the LCD.
- Press and hold the UNIT button until 'head-tail-cross' appears at the bottom of the LCD; the reading will then flash 3 times. Release the UNIT button.
- Point the meter into the wind until there is a steady compass reading. Press and hold the UNIT button until the compass reading flashes 3 times.
- The head or tail wind value will display. Press UNIT to see the crosswind.
- Press the M button to return to the compass-only mode.
- Note the wind direction indicator (item 2, Meter Description section).

### Wind Direction Considerations

The head-tail-crosswind is the relationship between travel direction and wind direction. When wind direction is fixed and travel direction changes, the wind resistance changes, for example the wind resistance for A is stronger than B (see diagram) and C is stronger than D. When calculating head, tail, and crosswind, first measure the travel direction (compass).



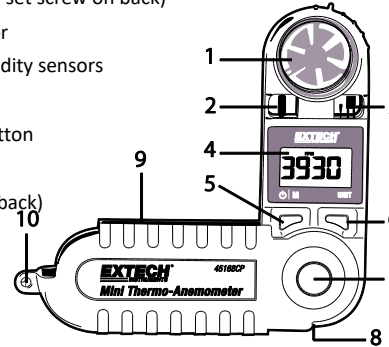
### Compass Calibration

- In compass mode, press and hold the two buttons to access the 30 sec. timer.
- Rotate the meter twice slowly in the direction shown in the diagram. Each turn should be 15 seconds in duration.
- After the two turns, the LCD will show 'END' to confirm the calibration.
- Calibrate the meter before each use and always after a battery change.



### Meter Description

- 1 Vane impeller (impeller set screw on back)
- 2 Wind direction indicator
- 3 Temperature and Humidity sensors
- 4 LCD Display
- 5 ON/OFF, M (MODE) button
- 6 UNIT button
- 7 Battery compartment (back)
- 8 Tripod mounting hole
- 9 Storage case
- 10 Lanyard holder



### Maintenance

#### Battery Replacement

Turn the meter off before opening the battery compartment. Using a coin, turn the battery compartment cover (back) CLOCKWISE to remove it. Once opened, observe the position of the battery, placing the new one in the same position. Secure the battery compartment before use. Please dispose of the battery responsibly. Remove battery if meter is to be stored for a month or longer.



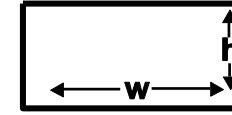
EU users are legally bound by the Battery Ordinance to return all used batteries to community collection points or wherever batteries / accumulators are sold. Disposal in household trash or refuse is prohibited. Disposal: Follow the valid legal stipulations in respect of the disposal of the device at the end of its lifecycle

#### Impeller Replacement

- Remove the rear set screw, located to the left of the impeller assembly.
- Twist the impeller assembly counter-clockwise to the OPEN (O) position and remove it.
- Install impeller by inserting & twisting the new impeller assembly clockwise to the LOCK (L) position.
- Tighten the set screw.

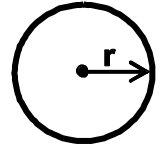
### CFM Air Volume Measurements

Measure the area of the duct using the diagrams below for rectangular or circular duct. If the duct measurements are made in inches, divide the inches by 144 to get the area in square feet. Insert the area value (in square feet) into the equations below. Note that the air velocity must also be inserted into the cubic equations.



$$A = w * h$$

CFM (ft<sup>3</sup>/min) = Air Velocity (ft/min) x Area (ft<sup>2</sup>)



$$A = \pi r^2$$

CMM (m<sup>3</sup>/min) = Air Velocity (m/sec) x Area (m<sup>2</sup>) x 60

### Specifications

Measurement	Range	Resolution	Accuracy (% of rdg)
MPH (miles per hour)	2.5~44.7 MPH	0.1 MPH	± (3% + 0.4 mph)
KPH (kilometers per hour)	4.0 to 72.0 km/h	0.1 km/h	± (3% + 1.4 km/hr)
KNT (naut. miles/hour)	2.1~38.9 knots	0.1 knots	± (3% + 0.6 knots)
MPS (meters per second)	1.1~20.0 m/s	0.1 m/s	± (3% + 0.2 m/s)
FPM (feet per minute)	216~3936 ft/min	2 ft/min	± (3% + 40 ft/min)
BF (Beaufort force)	1~8 BF	1 BF	± 1
Temperature	-15~50°C (5~122°F)	0.1°F/C	± 1.0°C (± 1.8°F)
Relative Humidity	0.1~99.9% RH	0.1% RH	± 3% (10~90%)
Dew Point Temperature	-20~50°C (-4~122°F)	0.1°F/C	Calculation
Wet Bulb Temperature	-5~50°C (23~122°F)	0.1°F/C	Calculation
Compass	0~360°	1°	± 2°
Wind Chill	-20~50°C (-4~122°F)	0.1°F/C	± 2%
Display	LCD with multifunction indicators		
Sensors	Sapphire bearing, non-corrosive vane; Precision thermistor for temperature measurements; Capacitive RH sensor		
AVG Mode	10 reading averaging for wind speed mode		
MAX Mode	MAX recalls the highest wind speed reading		
Response time	Air Temperature and RH: 60 seconds (typical)		
Water and Drop Resistant	Water resistant housing to 1m (3') / Drop tested to 2m (6')		
Operating conditions	-15 to 50°C (5 to 122°F) / < 80% RH		
Power supply	Lithium battery (CR-2032 or equivalent)		
Dimensions / Weight	140 x 45 x 25mm (5.5 x 1.8 x 1.0") folded / 90g (3.2 oz.) Vane diameter: 24mm (1.0")		
Safety Standard	EN 61326-1 (2013)		

### Two-year Warranty

Teledyne FLIR LLC, warrants this Extech brand instrument to be free of defects in parts and workmanship for two years from date of shipment (a six-month limited warranty applies to sensors and cables). To view the full warranty text please visit: <http://www.extech.com/support/warranties>.

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