Instruction Manual

No. 7650-00 Mini Anemometer

Model PC-51D

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Introduction

Thank you for purchasing the Mini Anemometer PC-51D.

- This product is designed to measure wind velocity and temperature. Do not use it for other purposes.
- Read this manual before use. Keep this manual in a safe place for future references.

Overview

PC-51D is a compact and lightweight portable anemometer. It conveniently fits in the pocket, and so can easily be carried for measuring outdoors, such as when mountain climbing, camping, fishing, yachting, windsurfing, or gliding.

It is also ideal for on-site measurements, such as checking the wind velocity of air-conditioning or measuring a wind velocity readily at a construction site.

Features

- Folding case
  Folds to pocket-size when not in use.

- Auto power-off
  The power is automatically turned off to conserve battery power if the device is not used for more than 15 minutes.

- Easy reading
  Holds the measured value.

- Display of mean and maximum values
  The moving average of wind velocity and maximum wind velocity are displayed.

- Various units of measurement
  In addition to ordinary units such as m/s and °C, wind chill factor and Beaufort wind scale can be used.

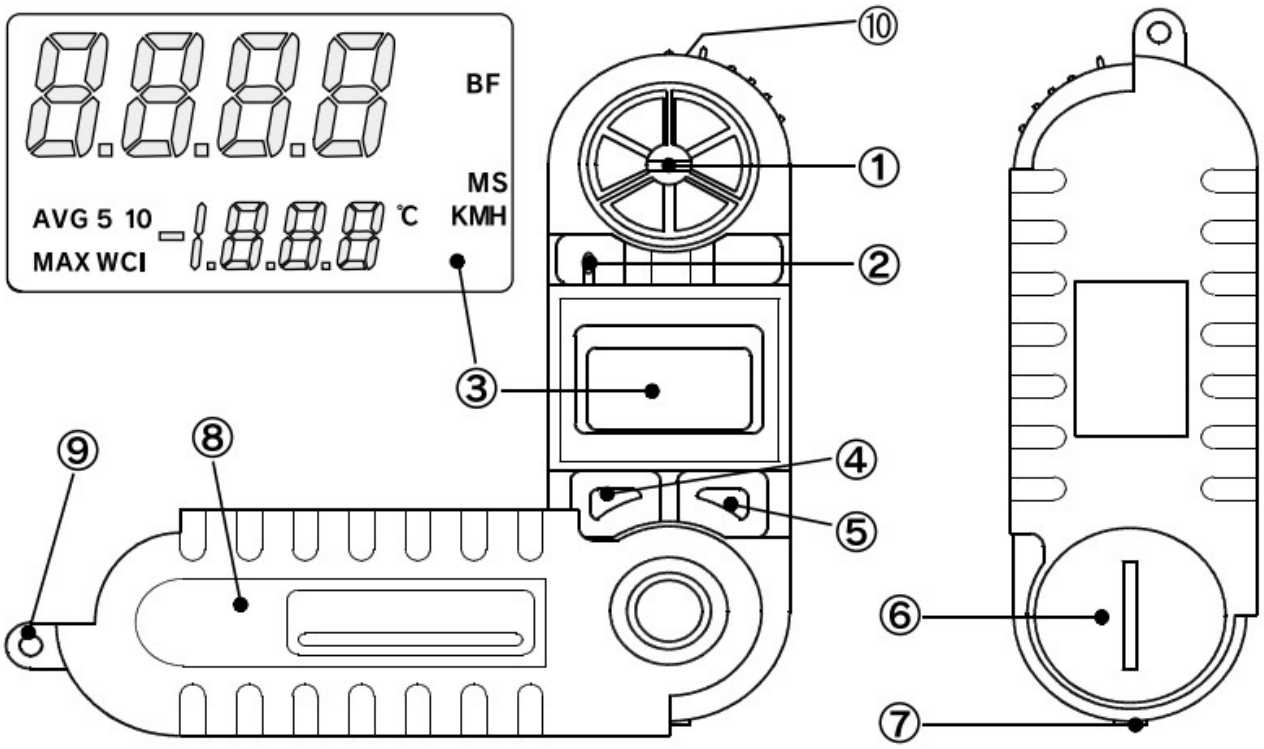
⚠ Caution

- The temperature range of the PC-51D is –15 to 50°C. Never use the device outside the specified temperature range. If used, faults may occur.

- If the device is used to measure wind velocity by holding it out of an automobile window while driving, the wind flow will be faster due to the driving speed, thus making measurement impossible (beyond the measurement range), and possibly damaging the vane (propeller). Always use the device within the measurement range.

Names and Functions of Components

Main unit



① Vane (propeller) : Wind velocity is measured by monitoring the revolving vane.

② Temperature sensor : Temperature is measured by this thermistor-type sensor.

③ LCD display : Displays measured values and the operating status of the device.

④ ON/OFF/HOLD key : Pressing this key turns the power on or off. Pressing and holding the key while the device is on holds (freezes) the readings.

⑤ UNIT/MODE key

UNIT : Used to select the unit of wind velocity and temperature.

MODE : Used to select whether to display an average (AVG, AVG5, AVG10), max value (MAX), or WCI value.

⑥ Battery lid : This lid covers the coin cell battery (CR2032) compartment.

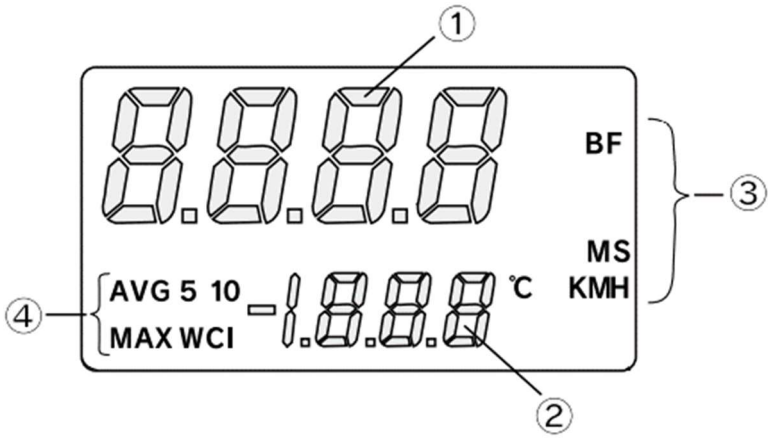
⑦ Female thread for fixing a tripod
: Used to screw a tripod to the device.

⑧ Case : Protects the vane (propeller) and the display panel.

⑨ Strap mount : An accessory hand strap is fixed to this mount.

⑩ Hook on the Main body : This hook is to pull and slide out the vane (propeller) and the LCD display from the case.

LCD display panel



① Wind velocity value
② Temperature value.
③ Unit of wind velocity
- BF: Beaufort wind scale
- MS: m/s
- KMH: km/h

④ Other indications
- AVG: Moving average of wind velocity in 13 seconds
- AVG5: Moving average of wind velocity in 5 seconds
- AVE10: Moving average of wind velocity in 10 seconds
- MAX: Maximum wind velocity and temperature
- WCI: Wind chill factor

2. Notes on Use

To ensure correct use of the device, observe the following.

- Do not drop the device or apply impact to it. PC-51D is a precisive instrument.
- Do not use the device in a place exposed to direct sunlight or near heating equipment. Doing so may result in deformation of the casing or malfunction of the device.
- Leaving this device inside a car under the full sun in a hot climate will cause it to become extremely hot, possibly resulting in failure. Do not leave it in such hot places.
- Do not use the device in an environment where electrical noise is generated. Doing so may result in unstable display or larger errors.
- Never disassemble or modify the device. Doing so may result in failure. For repair or calibration, contact the store from which the device was purchased or our service network.
- Never use the device outside the permissible measurement range. Doing so may result in failure.
- Never allow the unit to become wet, as it is not waterproof.
- If the device is not going to be used for a long time, remove the battery. Otherwise, the battery power will be drained and the battery fluid may leak, resulting in failure.
- Keep batteries out of reach of children. If you swallow a battery accidentally, consult a doctor immediately.
- Do not dispose of the used battery in a fire.
- For environmental reasons, dispose of the used battery in compliance with local rules and regulations.
- Do not wash or wipe the device with alcohol, thinner, or other organic solvents. If the device becomes dirty, wipe it with a tightly-wrung towel dipped in warm water with a neutral detergent.

3. Installing or Replacing the Battery

(1) Remove the battery lid by turning it clockwise (direction of the arrow on the lid) using a coin or the like.

(2) When replacing the battery, take out the used battery.

(3) Insert the coin cell battery (CR2032) so that the positive terminal (+) is facing upward.

(4) Reinstall the battery lid in the reverse order of removal.

⚠ Caution

- If the display becomes weak or disappears during measurement, it indicates that the battery power is insufficient. Replace the battery immediately with a new one (CR2032).
- Measurements while the battery power is insufficient may result in faulty operation.

4. Setting the Hand Strap

(1) Thread the thin loop at the end of the strap through the strap mount.

(2) Pass the strap back through the loop and pull it out to fasten the strap firmly.

5. Measuring Procedures

(1) Hold the hook on the main unit and take out the sensor and display panel from the case. The case opens at angles of up to 180° at which a stopper prevents further opening. Do not forcibly open it more than 180°.

(2) Select the unit of wind velocity.
Press UNIT/MODE key while the device is turned off. Each time the key is pressed, the unit set changes as follows: “MS” (meter per second), “KMH” (km per hour), and “BF” (Beaufort wind scale). When the desired unit appears, do not press any key for 10 seconds until the it is registered.

(3) Press ON/OFF key to turn the power on. Make sure that the selected units of measurement light on the display panel.

(4) Orient the probe in the direction of wind flow. Set the probe so that wind is flowing from the rear surface of the probe (the serial number is on) to the front surface (the LCD is on).

(5) When the approximate direction of wind flow is determined, wait at least two seconds for the measured values to stabilize before reading them.

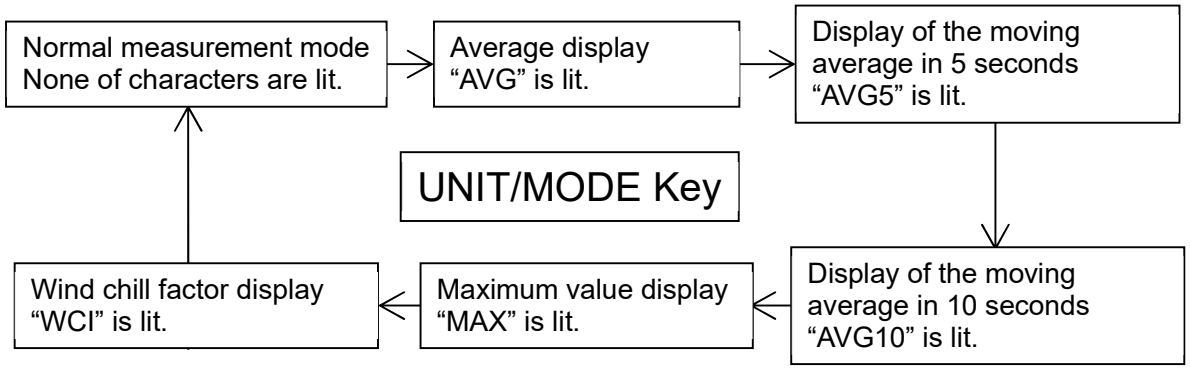
(6) Upon completion of measurement, press ON/OFF key to turn off the power.
If none of the function keys are pressed for approximately 20 minutes, the auto power-off function will be activated, causing the power to shut off automatically. Make sure that the operation interval will not exceed 20 minutes when continuous measurement is to be performed.

Caution

- If the device is used in an atmosphere of high wind velocity (beyond the measurement range), or a measurement is taken while holding the unit out of an automobile window while driving, the vane (propeller) may be damaged. Do not use the device in such a manner.
- Measurement outside the specified measurement range is not guaranteed (see the accuracy table). It may result in failure or damage of the device.
- To assure measurement accuracy, set the probe at right angles ±5° to the direction of wind flow. The measurement accuracy will decrease if the angle exceeds ±5°.

6. Displaying the mean, maximum, and wind chill factor

By pressing UNIT/MODE key while the device is turned on, the display mode of averages, maximum values, or WCI values can be selected. Each time UNIT/MODE key is pressed, the state changes as follows.



Displaying an average

(1) Press ON/OFF key. Numeric values will appear on the display and measurement mode will be invoked. The sample is measured every second.

(2) Press UNIT/MODE key once so that “AVG” lights on the display panel. On the upper 7-segment section, the average of 13 measurements will be displayed.

(3) Press UNIT/MODE key again so that “AVG5” lights on the display panel. On the upper 7-segment section, the moving average of 5 measurements will be displayed.

(4) Press UNIT/MODE key once again so that “AVG10” lights on the display panel. On the upper 7-segment section, the moving average of 10 measurements will be displayed.

(5) To return the device to standard measurement mode, keep pressing UNIT/MODE key until none of the characters on the lower left of the display panel are lit.

Displaying the maximum value

(1) Press ON/OFF key. Numeric values appear on the display and measurement mode is invoked.

(2) Keep pressing UNIT/MODE key until “MAX” lights on the lower left of the display panel and maximum value display mode is invoked.

(3) The maximum wind velocity and temperature value will be displayed and held on the display (both wind velocity and temperature are held).

(4) To return the device to standard measurement mode, keep pressing UNIT/MODE key until none of the characters on the lower left of the display panel are lit.

Displaying the wind chill factor

(1) Press ON/OFF key. Numeric values will appear on the display and measurement mode will be invoked.

(2) Keep pressing UNIT/MODE key until “WCI” lights on the lower left of the display panel and wind chill display mode is invoked.

(3) The wind chill factor is calculated from the wind velocity and temperature, and displayed.

(4) To return the device to standard measurement mode, press and hold UNIT/MODE key until none of the characters on the lower left of the display panel are lit.

7. Specifications

Product name	No. 7650-00 Mini Anemometer	
Model	PC-51D	
	Temperature	Wind velocity
Measuring range	−15.0 to 50.0°C	1.1 to 20.0 m/s 4.0 to 72.0 km/h
Accuracy	±1.0°C	±0.9 m/s (1.1 to 10.0 m/s) ±2.0 m/s (other)
Resolution	0.1°C	0.1 m/s, 0.1 km/h
Sensor	Thermistor	Vane rotation
Other indications	Beaufort wind scale: 0 to 8 Wind chill factor: −22.0 to 52.0°C	
Operation ambient	0 to 50°C, lower than 80%rh without condensing	
Storage ambient	−10 to 50°C without condensing	
Power	Coin battery CR2032 x 1	
Battery life	400 hours if operated continuously	
Material	ABS resin	
Dimensions	Body: 144 (W) x 47 (H) x 26 (D) mm when folded Vane dia.: 24 mm	
Weight	95 g including a battery	
Standard accessories	Coin battery CR2032 x 1, hand strap	