

**Instruction Manual**  
**No. 7650-20 Mini Anemometer**  
**Model PC-53D**

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URL: <http://www.sksato.co.jp/english/>

Thank you for purchasing the Anemometer model PC-53D.

- This model is designed to measure wind velocity, temperature and humidity. Please do not use it for the other purposes.
- Read this manual thoroughly before use and keep it in a safe place for future references.



### **Warning**

The PC-53D is not explosion-proof. Do not use it in an atmosphere containing flammable gas.



Beware of explosion!

There is a risk of explosion

If you have any questions about this product, please contact the store from which the unit was purchased or our service network.



### **Caution**

In order to use the PC-53D properly, please follow the undermentioned instructions.

- The units other than m/s (meter/second) are displayed for the reference purpose. We guarantee the measuring accuracy for the values with m/s only.
- Use this unit only in standard atmosphere but the others.
- This unit isn't water-proof structure. Do not get wet the unit.
- Be sure to use the unit within the measuring range. Using the unit outside the specified measuring range results in failure or damage.
- If the condensation occurs on the unit, immediately turn the power off and let it dry naturally at normal temperature before use.
- Use of the unit in electrically noisy environments results in unstable display, increased error.
- If the unit is left in a car during summer time, heat from sunlight may results in failure. Do not leave it such a place.
- As measuring the wind velocity by holding this unit out of a car window while driving is very dangerous, never do it.
- Do not disassemble, modify the unit nor use the wrong battery. Doing so result in inaccurate measurement or failure.
- This model is a precision unit. Do not drop the unit or apply impact to it.
- Do not wash or wipe this unit with alcohol, thinner, or other organic solvents. If the unit becomes dirty, wipe it with a tightly-wrung towel or the like that has been dipped in warm water with a neutral detergent.
- If the unit is not to be used for a long time, remove the battery. Otherwise, the battery may leak fluid, which may result in failure.
- Keep batteries out of reach of children. If you swallow a battery accidentally, consult a doctor immediately.
- For repair, contact the store from which the unit was purchased or our service network.

## **Overview**

The PC-53D is a compact and lightweight portable anemometer.

Moreover, a temperature and humidity sensors are built in a compact body.

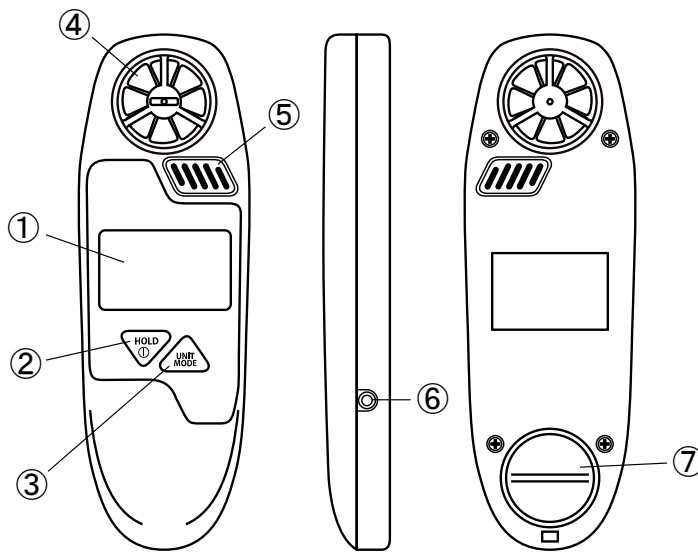
This is a multifunctional anemometer which measures temperature and humidity in the atmosphere, and displays the dew point and wet-bulb temperature by calculation. An external temperature probe is also usable.

## Features

- Pocket-size, easy to carry
- Measurement of wind velocity, temperature and humidity is possible.
- Display of various calculated values  
The wind chill factor, Beaufort wind scale, dew point and wet bulb temperature can be calculated and displayed.
- Auto power-off function  
This function is to conserve battery power for user from forgetting the turn-off the power of this unit.

## 1. Names and Functions of Components

### 1-1. Main unit



- ① LCD display : Display the measured values and the operating status of the unit.  
\*For more detail, please refer to the section “1-2. LCD display panel”.
- ② HOLD/ⓘ key : Pressing this key turns the power on or off.
- ③ UNIT/MODE key : Use to switch the measured unit or measurement mode.
- ④ Wind velocity sensor : The wind velocity is measured.
- ⑤ Temperature/Humidity sensor : The part which the temperature and humidity are measured.
- ⑥ Outlet for external temperature sensor : The part which the external sensor is attached
- ⑦ Battery lid/battery compartment : This lid covers the coin cell battery (CR2032) compartment.

## 1-2. LCD display

### ① 7-segment display

: It displays each measured value.

### ② Unit of wind velocity

: It displays the measurement units for wind velocity

BF (Beaufort scale)

FT/M (feet/minute)

M/H (mile/hour)

KMH (kilo meter/hour)

M/S (meter/second)

KNT (knot)

### ③ MAX

: Lit while the unit is in the mode for the maximum wind velocity measurement.

### ④ H

: Lit while the measured value is hold.

### ⑤ WCI

: Lit while the unit is in the mode for the wind chill measurement.

### ⑥ DP

: Lit while the unit is in the mode for the dew point measurement.

### ⑦ WBT

: Lit while the unit is in the mode for the wet bulb temperature measurement.

### ⑧ EXT

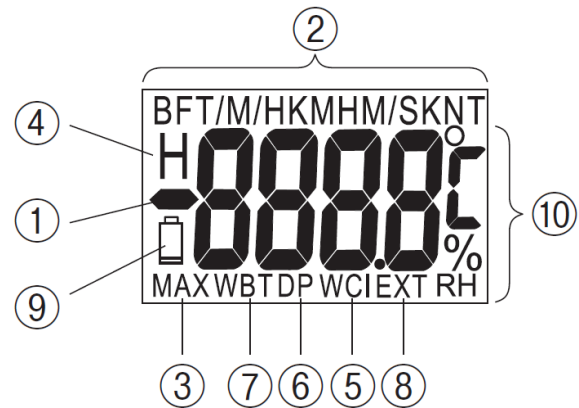
: Lit while the external temperature probe is measuring the temperature.

### ⑨ Low battery

: Lit when the battery is low and let you know to change the battery.

### ⑩ °C %rh

: Characters of unit of temperature(°C), unit of humidity(%rh)



## 2. Installing or Replacing the Battery

Replace the battery as follows before using the unit for the first time or when low battery is displayed.

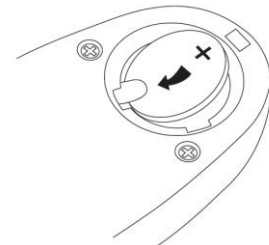
(1) Remove the battery lid by turning it counter-clockwise by using a coin or the like.

(2) In case of replacing a battery, take out the used battery.

(3) Insert the coin cell battery (CR2032). Check the polar direction of positive and negative and place the battery correctly (Placing the battery between positive metal fitting and negative metal fitting)

After the placement of the battery, that of the positive terminal (+) is facing upward.

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



### Caution

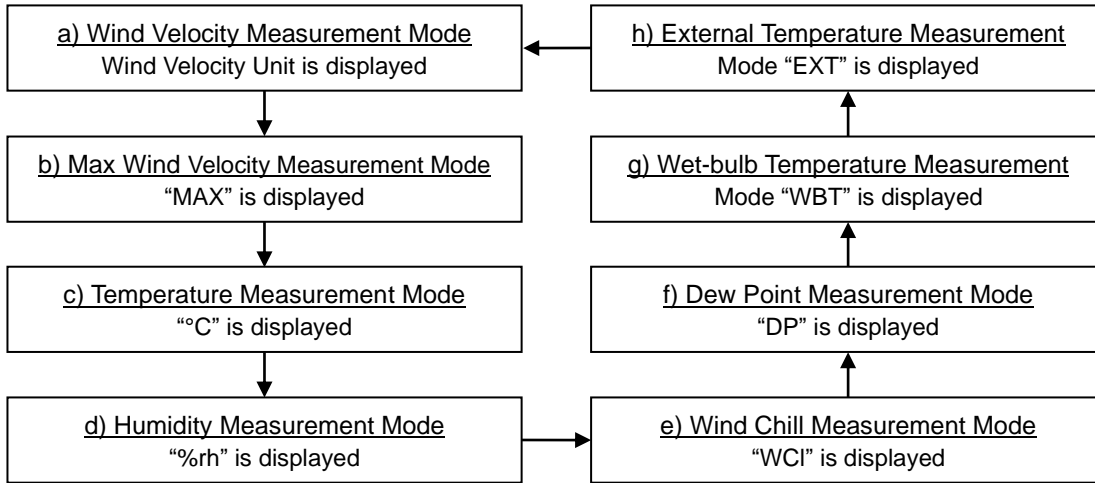
- If the low battery is displayed, replace the battery immediately with a new one (CR2032).
- Measurements while the battery power is insufficient may result in faulty measurement.
- Always use the new battery
- Do not throw the used battery in the fire.
- For environmental preservation dispose the used batteries according to the regulation of each local government

## 3. Measuring Procedures

(1) Press the HOLD/⓪ key. After the whole area of the display is lit, It is ready to measure.

\* The display mode just before turning off is held. After replacement of batteries, the display is a Wind Velocity Measurement Mode.

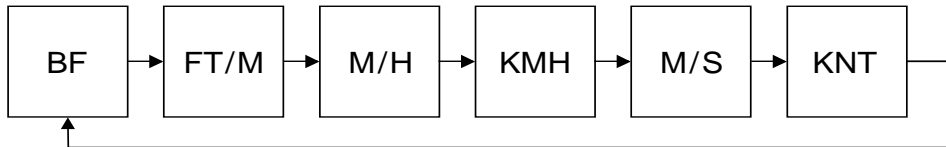
(2) Choose the Mode of measurement by pressing the UNIT/MODE key.



a) Wind Velocity Measurement Mode

Wind Velocity Measurement Mode is to measure the Wind Velocity.

While the wind velocity is displayed and hold the HOLD/⊙ key, each time the UNIT/MODE key is pressed, the unit set is cycled as follows. Choose the measurement unit displayed.



b) Max Wind Velocity Measurement Mode

Display the updated maximum value of wind velocity during measurement.

NB. The maximum value is reset as the unit is turned off.

c) Temperature Measurement Mode

Temperature Measurement Mode is to measure the temperature.

d) Humidity Measurement Mode

Humidity Measurement Mode is to measure the humidity.

e) Wind Chill Measurement Mode

Wind Chill Measurement Mode is to display the Wind Chill.

f) Dew Point Measurement Mode

Dew Point Measurement Mode is to display the dew point temperature by calculating from temperature and humidity.

g) Wet-bulb Temperature Measurement Mode

Wet-bulb Measurement Mode is to display the Wet-bulb temperature by calculating from temperature and humidity.

(3) Direct the unit in the way that the wind measured comes through the unit from back (the side which serial number is printed) to front (the side of LCD display).

(4) Turn off the unit by pressing the HOLD/⊙ key 2 seconds or more after use.



**Caution**

- Do not use the unit in the environment beyond the specified operating condition. It may lead to failure of the unit.

- Measurement outside the specified range may result in failure or damage of the unit. Do not use the unit in such a manner.
- The rapid change of ambient temperature might affect the measurement accuracy. To assure the measurement accuracy, wait until the unit adapts the ambient temperature.

### Hold Function

When the temperature changes too frequently during measurement, press the HOLD/⓪ key to hold the measured value for easier reading.

- How to activate the hold function
  - ① Press HOLD/⓪ key in the measurement mode. The “H” character is displayed and the measured value is being held.
  - ② Press the HOLD/⓪ key again to release the Hold function. The “H” character is disappeared and it returns to measurement mode.

### Using the external temperature probe

Measuring the temperature with external temperature probe.

- How to measure the temperature
  - ① Connect the external temperature probe to the unit.
  - ② Turn the power of the unit on and press the UNIT/MODE key to switch to the EXT display. The value measured by the external temperature probe will be displayed.

### Auto power-off function

If the unit is not operated for approximately 5 minutes, the power will be automatically turned off. This Auto power-off function conserves battery power even if you forget to turn the power off.

- How to release the Auto power-off function
  - ① Turn the power off and keep pressing the HOLD/⓪ key for 2 seconds or more.
  - ② When the character “n” is displayed after the entire display is lighted-up, release the HOLD/⓪ key. The character “n” is cleared and the unit is in measurement mode. The Auto power-off function will be deactivated.



### **Caution**

Once the unit is turned off, the Auto power-off function is activated again.

If the Auto power-off function is not required, release the Auto power-off function whenever you start up the unit.

## **4. Error message**

Measurement Target	Error Code	Cause	Solution
Wind Velocity	H02	Measured value is lower than the measurement range	Use the unit within measurement ranges. If error message is still shown, stop using it and contact the store you purchased it or our service network
Temperature			
Humidity	H03	Measured value is higher than the measurement range	
Dew point			
Wet-bulb temperature	E04 E33	Out of the temperature measurement range. Or the unit has defect.	
Humidity,			
Dew point			
Wet-bulb temperature			

## 5. Specifications

Product name	No.7650-20 Mini-Anemometer			
Model	PC-53D			
Measurement range	Temperature	0.0 to 50.0°C		
	Humidity	10.0 to 95.0%rh		
	Wind velocity	meter/second	1.1 to 18.0m/s	
		feet/minute	217 to 3540FTM	
		knot	2.1 to 35.0KNT	
kilo meter/hour		4.0 to 64.0KMH		
	mile/hour	2.5 to 40.0M/H		
	Beaufort scale	1 to 8		
Accuracy	Temperature	±1°C		
	Humidity	±5%rh (at 20 to 30°C, 40 to 70%rh), ±8%rh (at others)		
	External temperature	±1°C		
	Wind velocity	±1.1m/s (at 1.1 to 10.0m/s), ±2.0m/s (at others)		
Resolution	Temperature	0.1°C		
	Humidity	0.1%rh		
	External temperature	0.1°C		
	Wind velocity	meter/second	0.1	
		feet/minute	1	
		knot	0.1	
kilo meter/hour		0.1		
mile/hour		0.1		
	Beaufort scale	(1)		
Dew point display range	-20.0 to 49.0°C (display value calculated from temperature and humidity within measuring range)			
Wet-bulb temp. display range	-5.0 to 49.0°C (display value calculated from temperature and humidity within measuring range)			
Measurement sampling time	about 1 second (As for the wind velocity, moving average value of 2 seconds is displayed )			
Sensing elements	Temperature: Thermistor Humidity: Electrostatic capacity humidity sensor Wind velocity: Vane (propeller) rotation detection			
Operation ambient	0 to 50°C, Less than 95%rh (no condensation)			
Storage temp.	-10 to 50°C (no condensation)			
Power	Lithium button battery (CR2032) x 1			
Battery life	about 140 hours (continuous use)			
Materials	Main unit : ABS resin Vane: ABS resin External temperature probe sensing stem: SUS			
Dimensions	Main unit: 46(W) x 136 (H) x 17(D) mm External probe: stem about 4 mm dia. x 100 mm (L), cable length about 1m			
Weight	Main unit: about 57g (including a battery), External probe: about 32g			
Accessory	Lithium button battery (CR2032) x 1, Instruction manual x 1 Hand strap x 1 External probe x 1			

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