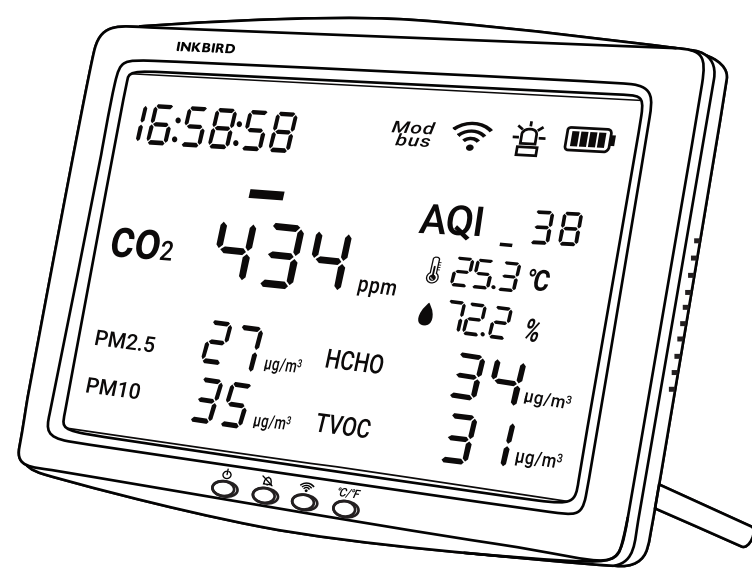# INKBIRD
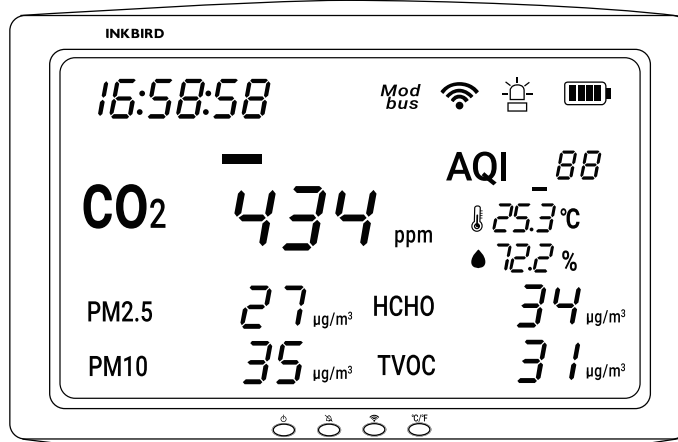

Air Quality Detector

USER MANUAL

01 Specifications

- Product Name: Air Quality Detector
- Model NO: MH-128
- Item No: IAQM-128W
- Detecting Item: CO2/Temp/Hum/AQI/HCHO/PM2.5/PM10/TVOC
- Material: ABS/Acrylic/Electronic Components/Air Sensors
- Carbon Dioxide: 400-5000ppm (±50ppm + 5%)
- PM10: 0-999μg/m³
- PM2.5: 0-999μg/m³
- TVOC: 0-9999μg/m³
- HCHO: 0-9999μg/m³
- AQI: 0-499
- Temperature: 0-55℃ (℃/℉ switchable)
- Humidity: 0-99%
- Li-Battery: 2500mAh (About 2 hours)
- Type-C Power Supply: 5V/2A
- Wi-Fi: IEEE802.11/b/g/n 2.4GHz
- Bluetooth: BLE5.0
- Display Size: 25*15cm (11.4 Inch)
- Weight: 850g
- Rated Power: 10W
- Wi-Fi Supporting: Wi-Fi+BT CB3S (Optional)
- Connecting Platform: INKBIRD APP / PC tool /Modbus connecting
- RS485 Input: 5V/1A
- RS485 Transmission Rate: 10Mbps
- Data Logger: Updated every 10 minutes, 30 days data storage
- Flash Memory Capacity: 512 KB
- Product Warranty: 1 Year
- Package Content: 1x Air Quality Monitor; 2x Support bars; 1x Type-C Cable; 1x Power Adapter; 1x Wall Mount Accessories
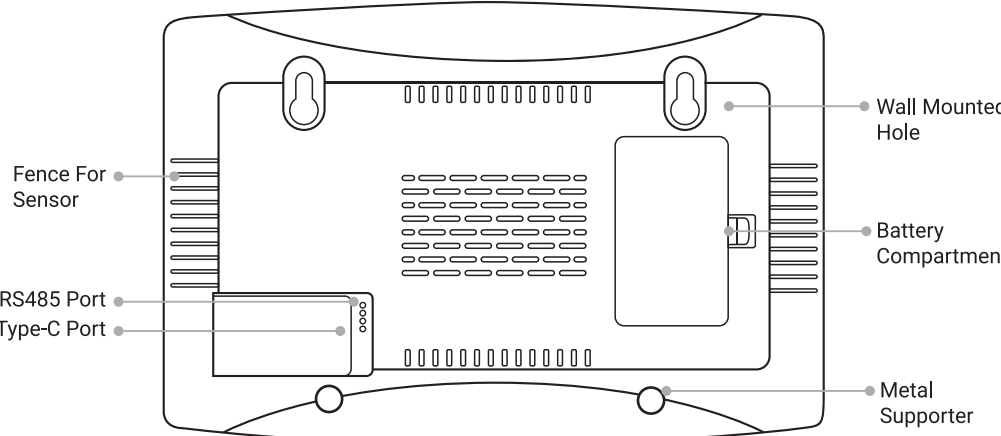
02 Precautions For Use

(1) This product should not be dipped in water, nor should it be placed in a high-temperature environment exceeding 60℃.

(2) This product belongs to a precision measuring instrument and shall not be dismantled without authorization.

(3) It cannot be measured in the environment of organic gas with too high a concentration for a long time.

(4) Built-in lithium battery, when measuring the air quality in the car, please do not put the carbon dioxide monitor with a lithium battery in the sun.

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03 Operation Instructions

Modbus	Modbus icon	〰	Wi-Fi icon	☀	Alarm icon	🔋	Battery life
---	LED indicator	☺	Power On/Off	☒	Alarm	☞	Wi-Fi Reset
☺	℉/℃ switcher						

Fence For Sensor
RS485 Port
Type-C Port
Wall Mounted Hole
Battery Compartment
Metal Supporter

-2-

(1) **Power ON/OFF:** Press and hold the ⏻ button for 3 seconds to turn the device on/off.

(2) **Alarm Function:** Press the ☒ button to turn on the alarm function. The ☒ icon will appear on the screen. After the alarm is triggered, press the ☒ button again to mute and turn off the alarm, and the ☒ icon will disappear on the screen. When the device is powered on, the alarm function is enabled by default.

Please note that the alarming values are factory reset and are NOT settable. Whether the CO2 value exceeds the standard is indicated by the LED indicator light on the screen, as shown in the following table:

Green	Orange	Red
Good	Normal	Bad
400-999ppm	1000-1399ppm	over 1400ppm
No Alarm	Alarm 5 times every 15s	Alarm 10 times every 15s

(3) **Wi-Fi Reset:** Press and hold the 🛜 button until you hear a beep to reset the Wi-Fi connection.

(4) **℉/℃ Selection:** Press the "C/ ℉ button to switch between ℉ and ℃.

(5) **Time Setting:** The time on the device will be automatically calibrated and synced with your smartphone after the Wi-Fi connection. You can also connect the device to your computer and press the [Sync System Time] button via the PC tool to update the time.

(6) Fences all around the product can make the sensor fully contact the air.
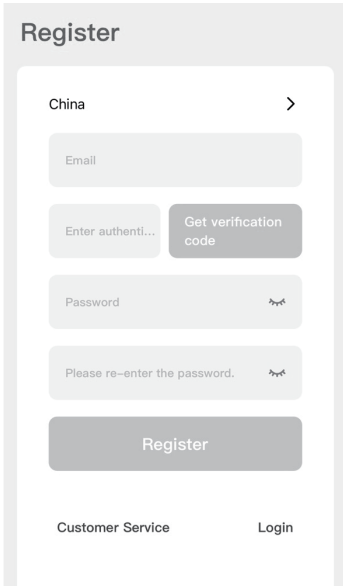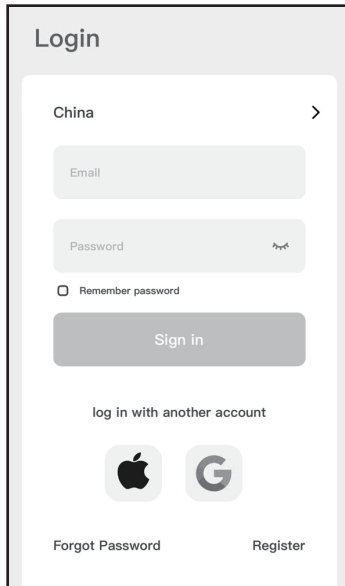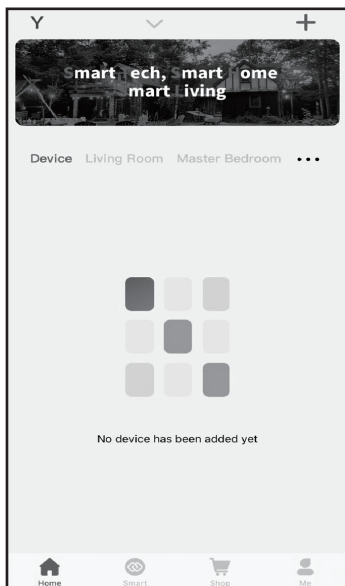
04 App Connection

Search the keyword "INKBIRD" in App store or Google Play, or scan the following QR code to download and install the APP.

If you have previously installed the app, please update it to the latest version.

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① Open the app and enter the login interface. You can log in by your Apple ID or Google ID. You can also click Register and use your email address as prompted to register.
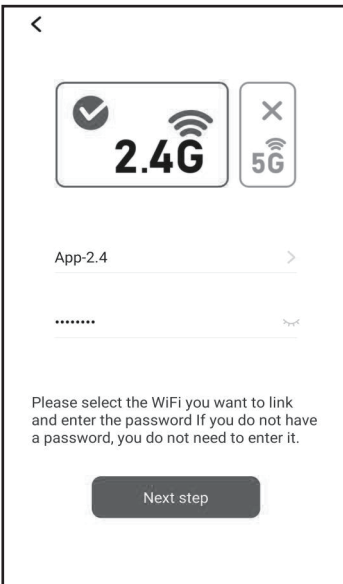

② Click the "+" in the upper right corner to add the device. Then, click the device icon on the app to start connecting.
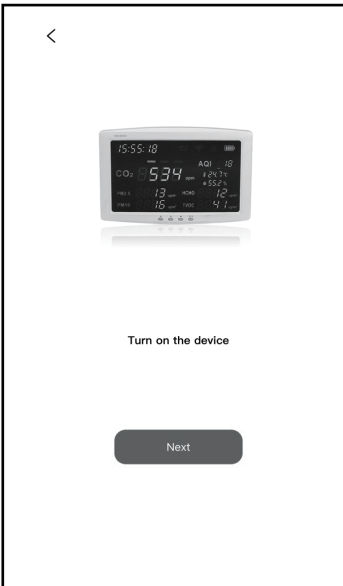

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③ Choose a Wi-Fi network and enter the password. Then, click "Next" to the next step.
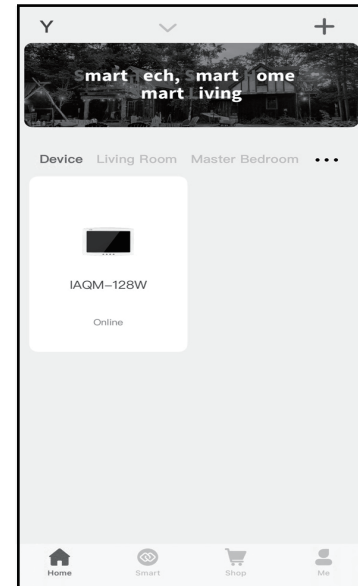
Note: The device only supports 2.4GHz Wi-Fi networks.

④ Turn on the device and press the 🛜 button on the device to reset the Wi-Fi connection, then click "Next" to continue.

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⑤ Connection Succeeded.

Notes:
1. During the connection process, it is necessary to ensure that the distance between the device and the mobile phone is within 30 meters, as Wi-Fi is a short-distance connection.
2. During the connection process, please ensure that the device and the mobile phone are in the same Wi-Fi environment and only support the 2.4GHz Wi-Fi signal mode.
3. Please make sure the Bluetooth of your phone is turned on before connecting.

05 RS485(Modbus) Setting

Device Modbus is a general protocol whose ports remain open. With it, users can obtain data and set the save path.
The external host can obtain all the data of 128W through the following data:
CA 03 00 00 00 09 95 B7

● Telecommunication Parameter
Baud rate: 9600
Data Length: 8 bit
Stop Bit: 1 bit
Verification: no
Equipment address: 0xCA

● Data Frame

Equipment address	Function	Starting Address	Coil number	CRC-16

Byte length of starting address and coil quantity are 2 bytes. (MS byte is ahead of LS byte.)

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● Equipment Register.

Address	Operation	Details	Remark
0x0000	Read only	Temperature, multiply by 10 times with hexadecimal. Such as 0x00FB, mean's temperature is 25.1℃.	
0x0001	Read only	Humidity, multiply by 10 times with hexadecima. Such as 0X0259, means humidity is 60.1%.	
0x0002	Read only	PM10, unit is ug/m³	
0x0003	Read only	PM2.5, unit is ug/m³	
0x0004	Read only	CO₂, unit is PPM	
0x0005	Read only	TVOC, unit is ug/m³	
0x0006	Read only	HCHO, unit is ug/m³	
0x0007	Read only	AQI	
0x0008	Read/Edit	CO₂ warning value setting	Optional

● Telecommunication Example
03 command, to read device current temperature
Sending : CA 03 00 00 00 01 94 71
Answering: CA 03 02 00 FB 5C 17
Data Analyse: 0x256+0xFB = 25.1℃

06 Export Data Using PC Tool

With the PC tool provided by the manufacturer, which is only compatible with the Windows system, we can view 4320 pieces of data from the late 30 days on a Windows computer and export the data as a file for further investigation. Please use the included type-C data cable to connect the product to the computer.
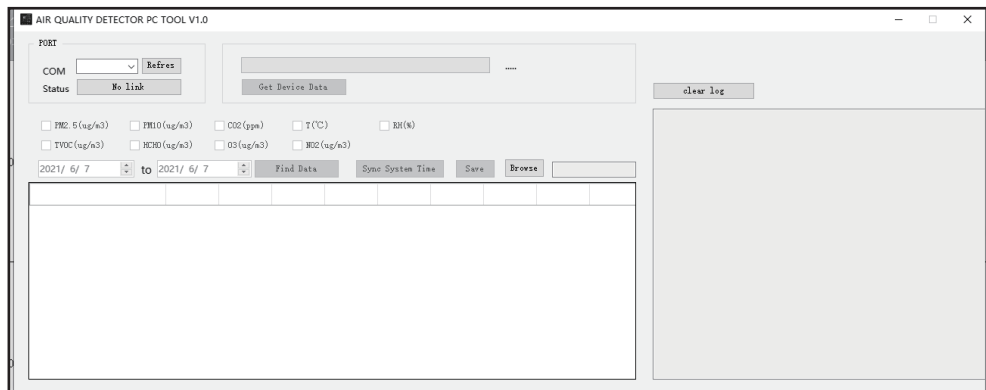

AIR QUALITY DETECTOR PC TOOL V1.0
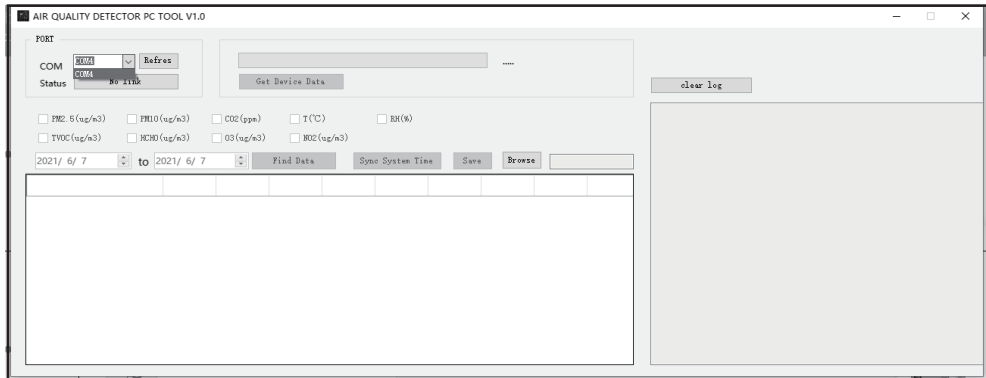
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Notes:

1. Please download the PC tool from the support section of the INKBIRD website.

2. Please check if your computer supports the CH340 serial port before use. This product supports CH340 serial ports 3/4/5/X, except serial port 1 or 2. If the CH340 driver has not been installed on your computer yet, please download it from the internet.

3. The PC tool requires the device to be running for at least 24 hours. Otherwise, no data can be exported successfully.

4. Make sure that the device battery is sufficient to prevent the computer from charging the device.

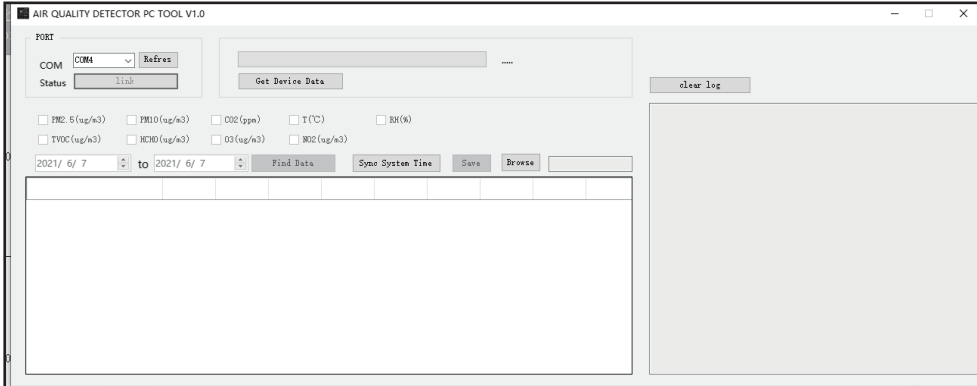● How To Export Data

(1) Open the PC tool on your computer.

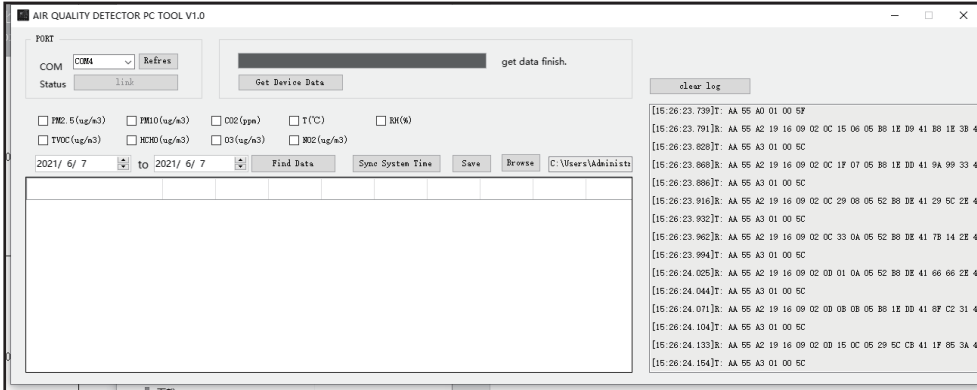(2) Select a CH340 serial port from the COM block, and then click "No link" to change to link status.
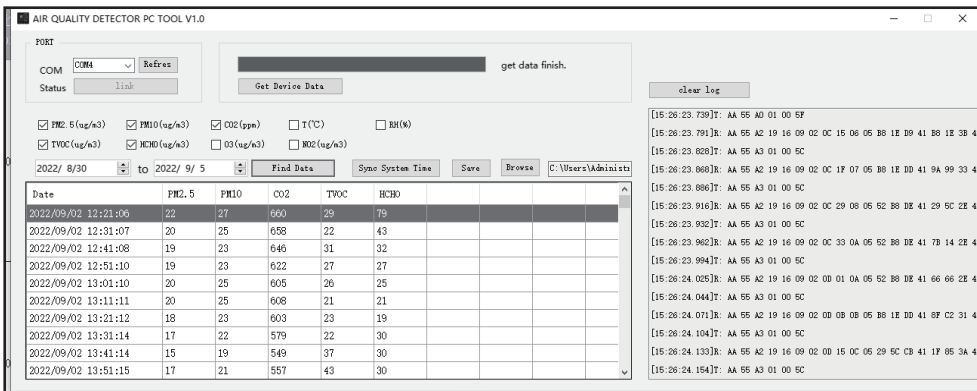

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(3) Click "Get Device Data" to upload the device data to the computer.
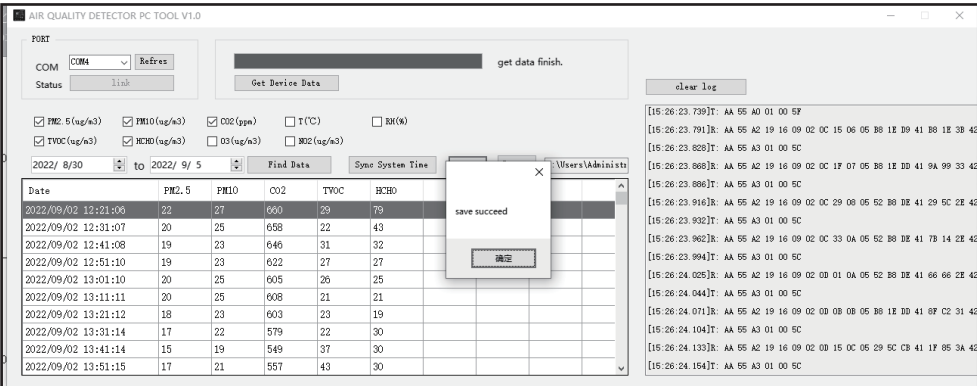

(4) Click "Browse" to choose a save path.

(5) Tick the checkboxes to choose the data to export.

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(6) Click "Save" to export the file.

07 FCC Requirement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
− Reorient or relocate the receiving antenna.
− Increase the separation between the equipment and receiver.
− Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
− Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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