

Inkbird ITH-20R-O with WiFi Gateway

INKBIRD ITH-20R-O Wireless Thermometer Hygrometer and IBS-M2S WiFi Gateway

USER MANUAL

1. Introduction

Thank you for choosing the INKBIRD ITH-20R-O Wireless Temperature and Humidity Monitoring System. This system combines a high-precision thermometer and hygrometer with a WiFi gateway (IBS-M2S) to provide remote monitoring capabilities via the INKBIRD app. It is designed to help you maintain optimal environmental conditions in various indoor and outdoor settings.

This manual provides detailed instructions for the proper setup, operation, and maintenance of your device. Please read it thoroughly before use to ensure safe and efficient operation.

2. Safety Information

- Keep the device away from extreme temperatures, direct sunlight, and corrosive materials.
- Do not immerse the gateway in water. The sensors are rain-resistant but not waterproof for prolonged submersion.
- Use only specified batteries (2 AAA for sensors). Ensure correct polarity when inserting.
- Do not attempt to disassemble or repair the device yourself. Contact customer support for assistance.
- Dispose of batteries and electronic components responsibly according to local regulations.

3. Product Overview

The INKBIRD ITH-20R-O system consists of a WiFi Gateway (IBS-M2S) and multiple wireless temperature and humidity sensors (ITH-20R-O). The gateway connects to your home WiFi network, allowing the sensors to transmit data to the INKBIRD app on your smartphone.



Figure 3.1: INKBIRD ITH-20R-O System Components

This image displays the main components of the INKBIRD ITH-20R-O system, including the central WiFi gateway, three compact wireless sensors, and a smartphone screen showing the INKBIRD app's real-time temperature and humidity readings.

Key Features:

- **Remote Monitoring:** View temperature and humidity data from anywhere via the INKBIRD app.
- **High Precision Sensors:** Swiss-made sensors provide accurate readings with $\pm 0.3^{\circ}\text{C}$ temperature and $\pm 3\%$ RH humidity accuracy.
- **Smart Alerts:** Receive notifications on your phone when readings exceed preset ranges.
- **Data Storage & Export:** Access historical data for up to one year and export it as a CSV file.
- **Multi-Sensor Support:** The gateway can connect and monitor up to 10 sensors simultaneously.
- **Wide Application:** Suitable for various environments including homes, greenhouses, wine cellars, and more.

Wireless Temperature and Humidity Sensor Set

up to 300 feet/91 meters of connection



Figure 3.2: Wireless Connection Range

This diagram illustrates the wireless connection capability of the INKBIRD system, showing the gateway centrally located and sensors placed in different rooms (Channel 1, Channel 2, Channel 3) with a connection range of up to 300 feet (91 meters).

Swiss-made Precision Sensor



	Temperature	Humidity
Range	-40°C ~ 70°C	0% ~ 100%RH
Accuracy	±0.3°C	±3%RH

Figure 3.3: Swiss-made Precision Sensor Details

This image provides a detailed view of the INKBIRD sensor's internal components, highlighting the Swiss-made precision sensor. A table below specifies the measurement ranges and accuracies: Temperature Range -40°C ~ 70°C with ±0.3°C accuracy, and Humidity Range 0% ~ 100% RH with ±3% RH accuracy.

4. Setup Guide

4.1. INKBIRD App Installation

1. Scan the QR code below or search for "INKBIRD" in your smartphone's app store (Google Play or Apple App Store) to download and install the INKBIRD app.



Figure 4.1: Scan to Download INKBIRD App

This image shows a QR code that can be scanned to quickly download the INKBIRD app for your smartphone.

2. Register an account and log in if you are a new user.

4.2. WiFi Gateway (IBS-M2S) Setup

1. Plug the IBS-M2S WiFi Gateway into a power outlet. The WiFi indicator light will start blinking.
2. Open the INKBIRD app. Tap the "+" icon in the upper right corner to add a new device.



Figure 4.2: Adding a New Device in App

This screenshot of the INKBIRD app shows the process of adding a new device, with the IBS-M2S gateway highlighted as an option to select.

3. Select "IBS-M2S" from the device list to begin the connection process.
4. Ensure your smartphone is connected to a 2.4GHz WiFi network. The gateway only supports 2.4GHz WiFi. Enable Bluetooth on your phone.



Figure 4.3: WiFi and Bluetooth Settings

This image displays a smartphone screen confirming the selection of a 2.4GHz WiFi network and the activation of Bluetooth, both necessary steps for gateway setup.

5. Press and hold the "RESET" button on the gateway until the WiFi indicator light blinks rapidly, indicating it's in pairing mode.



Figure 4.4: Pressing Reset Button

This image shows a hand pressing the 'RESET' button on the INKBIRD WiFi gateway, a step required to initiate the pairing process.

6. Follow the on-screen prompts in the app to complete the pairing process. Once successful, the WiFi indicator light will turn solid.



Figure 4.5: Pairing Successful

This diagram visually confirms a successful pairing, showing the smartphone connected to the WiFi gateway, which in turn is connected to the sensors.

4.3. Sensor (ITH-20R-O) Setup

1. Install 2 AAA batteries into each ITH-20R-O sensor, ensuring correct polarity.



Figure 4.6: Sensor Battery Installation

This image demonstrates how to correctly install the batteries into the ITH-20R-O sensor, showing the battery compartment and the required AAA batteries.

2. Place the sensors within range of the WiFi gateway.
3. In the INKBIRD app, navigate to the IBS-M2S gateway interface. Tap the "+" icon in the upper right corner to add a new sensor.
4. The app will automatically search for and connect to nearby ITH-20R-O sensors. Select the sensor you wish to add.
5. Once connected, the sensor's readings will appear in the app, along with its assigned channel number.



Figure 4.7: Multiple Sensors Connected in App

This image displays the INKBIRD app interface, demonstrating how multiple ITH-20R-O sensors can be connected and monitored simultaneously, showing their respective temperature and humidity readings.

5. Operating Instructions

5.1. Monitoring Data via App

- Open the INKBIRD app and select your IBS-M2S gateway. You will see real-time temperature and humidity readings from all connected sensors.
- Tap on a specific sensor to view its detailed data, including historical graphs (hourly, daily, monthly, yearly).

One Year of Data Storage & Export



Figure 5.1: Data Storage and Export

This image shows the INKBIRD app on a smartphone displaying historical data graphs, alongside a laptop screen illustrating the export of data as a CSV file, highlighting the system's data logging and export capabilities.

5.2. Setting Smart Alerts

- In the app, select a sensor and navigate to its settings.
- Set custom high and low temperature/humidity thresholds.
- Enable notifications to receive instant alerts on your smartphone when readings fall outside your defined safe range. The app can also alert for low battery or offline status.



Figure 5.2: Smart Alerts and Notifications

This image depicts a smartphone displaying a "High temperature" alert notification from the INKBIRD app, with the WiFi gateway visible in the background, illustrating the system's intelligent alert feature.

5.3. Sensor Placement Guidelines

The ITH-20R-O sensors are designed for versatile placement, both indoors and outdoors. Consider the following for optimal performance:

- **Indoor Use:** Place sensors in areas where temperature and humidity monitoring is critical, such as living rooms, bedrooms, kitchens, bathrooms, or wine cellars.
- **Outdoor Use:** The sensors are rain-resistant. For outdoor placement, choose a location that is sheltered from direct heavy rain and direct sunlight to ensure accurate readings and prolong device life. Examples include under eaves or in a covered patio area.
- **Range:** Ensure sensors are within the 300ft/91m wireless range of the WiFi gateway. Obstacles like thick walls can reduce this range.

Little Guardian of Healthy Life



Figure 5.3: Versatile Placement Examples

This collage illustrates various suitable locations for placing the INKBIRD sensors, including under eaves, in a living room, kitchen, bathroom, bedroom, and wine cellar, demonstrating its adaptability for different environments.

5.4. Using External Probes (Optional)

The ITH-20R-O sensors are compatible with external temperature/humidity probes (sold separately). These probes can be used for specialized measurements, such as monitoring liquid temperatures or hard-to-reach areas.

- Connect the external probe to the designated port on the side of the ITH-20R-O sensor.
- The sensor will automatically switch to reading data from the external probe.

Use with External Temperature/Humidity Probes



Please note that external probes need to be purchased separately.

Figure 5.4: External Probe Usage

This image shows an INKBIRD sensor connected to an external temperature probe, which is submerged in a glass of water, demonstrating its capability to measure temperatures in liquids or specific environments. Note that external probes are sold separately.

6. Maintenance

- **Battery Replacement:** When the app indicates a low battery for a sensor, replace the 2 AAA batteries. Ensure the device is powered off before replacing batteries.
- **Cleaning:** Wipe the devices with a soft, dry cloth. Do not use abrasive cleaners or immerse in water.
- **Storage:** If storing the device for an extended period, remove the batteries from the sensors to prevent leakage. Store in a cool, dry place.

7. Troubleshooting

Problem	Possible Cause	Solution
Gateway not connecting to WiFi.	Incorrect WiFi password; Router is 5GHz only or combined; Gateway too far from router.	Double-check password. Ensure your router supports 2.4GHz and your phone is connected to it during setup. Move gateway closer to router. Try resetting the gateway and re-pairing.
Sensors not connecting to Gateway.	Low sensor battery; Sensor out of range; Interference.	Replace sensor batteries. Move sensor closer to the gateway. Reduce potential interference from other electronic devices.
Inaccurate readings.	Sensor placed in direct sunlight or near heat/cold sources; Sensor exposed to extreme conditions.	Relocate the sensor to a more stable environment. Ensure proper ventilation around the sensor. Allow time for readings to stabilize after relocation.
App not receiving notifications.	App notifications disabled; App not running in background; Phone's power saving mode.	Check app notification settings and phone's system notification settings. Ensure the app is allowed to run in the background. Disable power saving modes that restrict app activity.

8. Specifications

Feature	Detail
Model Number	ITH-20R-O with WiFi Gateway
Brand	Inkbird
Temperature Range	-40°C to 70°C (-40°F to 158°F)
Temperature Accuracy	±0.3°C (±0.5°F)
Humidity Range	0% to 100% RH
Humidity Accuracy	±3% RH
Wireless Range	Up to 300ft / 91m (unobstructed, 2.4GHz WiFi)
Gateway Connectivity	2.4GHz WiFi
Sensor Battery Type	2 x AAA batteries (not included)
Item Weight	350 Grams (total package)
Package Dimensions	19.4 x 12.7 x 7.9 cm

9. Warranty and Support

INKBIRD products are designed and manufactured to the highest quality standards. For information regarding warranty coverage and terms, please refer to the warranty card included with your product or visit the official INKBIRD website.

If you encounter any issues or have questions about your INKBIRD ITH-20R-O system, please contact INKBIRD customer support. You can usually find contact details on the official INKBIRD website or through the "Help" or "Support" section within the INKBIRD app.