

# *Making Sense of Your World*



Customer Service

Website: [www.ubibot.io](http://www.ubibot.io)

# USER GUIDE

WS1 Pro – the Smartest Multi-Sensor IoT Device

## CATALOG

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Please follow the manual for proper operation before you get started.

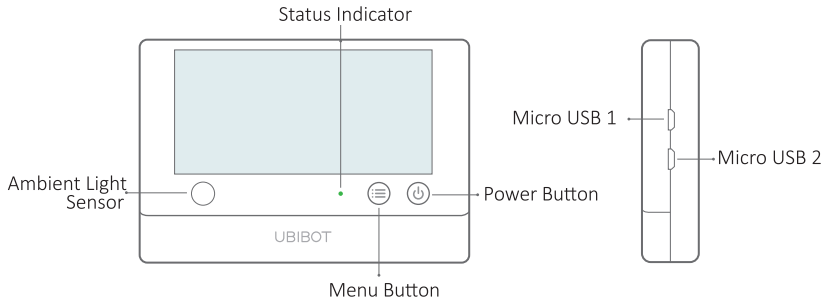
## INTRODUCTION

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The UbiBot® WS1 Pro is a smart multi-sensor device with both WiFi and mobile data\* capabilities. It makes environmental monitoring easier than ever with its accurate sensors and automatic wireless data synchronisation. The device comes with a free subscription to our advanced IoT Platform offering custom monitoring, analysis, reports and alerts. Device readings are displayed on the built-in LCD screen and are synchronised to the IoT Platform. You can access the data any time using our App or via the web. Some models come with a built-in RS485 ModBus\*.

\* Depending on the specific model purchased.

## INTRODUCTION



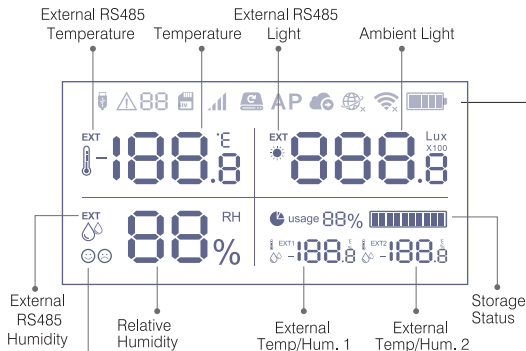
### Micro USB 1

Used for USB power supply, external DS18B20 probe (optional extra), or PC connectivity.

### Micro USB 2

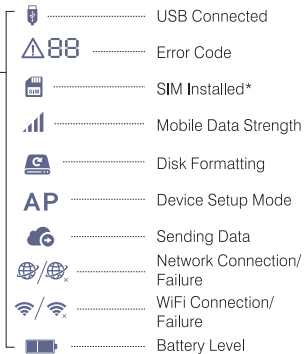
Used for USB power supply, external DS18B20 probe (optional extra). Optional RS485 interface, also suitable for Ubibot RS485 probes.

# INTRODUCTION



☺ Icon indicates optimal temperature and humidity range (20 to 26°C, 30% to 70% RH). See ISO7730 ASHRAE 55-1992 standard.

## Overview of LCD Display



⚠ Battery level calculated based on 4 standard 1.5v AA alkaline batteries.

## TECHNICAL SPECIFICATIONS

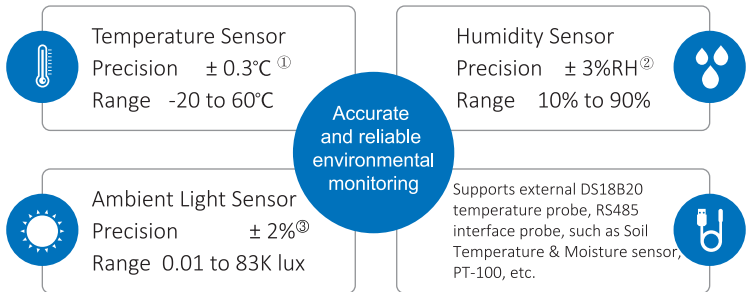
- WiFi: 2.4GHz, channels 1-13
- Flame resistant ABS + PC
- 4 x AA batteries (not included) or Micro USB power (DC 5V/2A) <sup>①</sup>
- 143g±3g, not including batteries
- 4.96" x 0.88" x 3.38"
- 2 x Micro USB (one with optional embedded RS485 interface)
- Built-in Memory: 300,000 sensing data
- Supports Micro SIM card (15mm x 12mm x 0.8mm) \*
- Supports up to 2 DS18B20 temperature probes (optional extra)
- Optimal working conditions: -20 to 60°C, 10% to 90%RH (No condensation)

① The device can preferentially use USB power if both USB and batteries are available. In this case, you can insert 4 AA batteries as a backup for the power supply in case of socket power goes off. Rechargeable batteries are also supported, but please note the device won't charge them when USB supply is plugged in.

\* Depending on the specific model purchased.

## TECHNICAL HIGHLIGHTS

The UbiBot WS1 Pro uses state-of-the-art industrial-grade sensors from Sensirion and Texas Instruments. The device integrates these sensors to create an efficient and highly-accurate IoT environmental monitoring solution.



① Quoted temperature precision applies between 0 to  $65^{\circ}\text{C}$ . ② Quoted precision for temperature of  $25^{\circ}\text{C}$ .

Otherwise the precision is  $\pm 4\%\text{RH}$ . ③ Quoted precision applies when light level  $>40$  lux.

The sensor precision will suffer in extreme conditions. We recommend you only use the device under the optimal conditions listed on page 04.



## DEVICE OPERATIONS

- **Switch On**

Press and hold the power button for 3 seconds until the screen is lit up. Release the button and the device is now on.

- **Switch Off**

Press and hold the power button for 3 seconds. The indicator will flash red once and the device is now off.

- **Device Setup Mode**

With the device switched on, press and hold the menu button for 3 seconds. Release the button when the indicator flashes alternately red and green and the AP icon will display on the screen.

- **Reset to Default Settings**

Switch the device off. Now press and hold the menu button and power button together for at least 8 seconds. Release the buttons when the indicator is constantly flashing red.



IMPORTANT

ALL STORED DATA WILL BE LOST IF YOU RESET YOUR DEVICE TO DEFAULT SETTINGS!  
REMEMBER TO SYNCHRONISE THE SENSING DATA TO THE UBIBOT® IoT PLATFORM OR EXPORT THE DATA TO YOUR COMPUTER BEFORE RESETTING IT.

## DEVICE OPERATIONS

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- **Manual Data Synchronisation**

With the device switched on, press the power button once to trigger a manual data sync. The indicator will flash green while the data is being transferred. If the server cannot be contacted, the indicator will flash red once.

- **Switch On/Off Voice Guide\***

Press the menu button twice in quick succession to enable or disable the voice guide. This will also refresh the last sensing data.

- **Display Backlight**

Pressing either of the buttons will switch on the display backlight for a short time.

- **Toggle Celsius or Fahrenheit\***

Press the power button twice to toggle between displaying Celsius or Fahrenheit.

- **Toggle Screen Readings**

Press the menu button once to toggle between the internal sensor readings and external probe readings. (depending on the specific model purchased)

\*Please note, this function is disabled if an external temperature probe is connected.

## DATA SYNC MODES



### 1 Sync via Mobile Data\*

The device includes a SIM card slot to allow mobile data sync if WiFi is unavailable.

### 2 Sync via WiFi

The device supports fast, secure data sync over WiFi using 2.4GHz, channels 1-13.



### 3 Automatic Network Selection

The device can preferentially connect to WiFi if both WiFi and mobile data are available. This saves you monthly data.

### Direct Data Access without Network

The device continues to collect data even without a network connection. When the network becomes available, it will sync the data. Alternatively you can use the PC Tools to manually export the data.

\* Depending on the specific model purchased.

## App INSTALLATION

### 1 App Installation

Download the App from [www.ubibot.io/setup](http://www.ubibot.io/setup)

Or

Search for “UbiBot” on the App Store or Google Play.



Please follow the on-screen instructions for step by step guidance. The printed manual is for reference only. If you failed to set up via the app, you can also try with the PC Tools, which is more professional but easier to operate.

### 2 PC Tools Installation

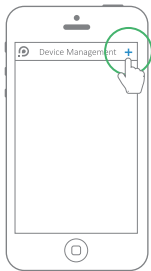
Download the tool from [www.ubibot.io/setup](http://www.ubibot.io/setup)

This tool is also helpful in checking setup failure reasons, MAC address, and offline charts. You can also use it to export offline data stored in the device internal memory.

## WiFi SETUP

### STEP 1.

Launch the App, register an account if needed and log in. On the home screen click the “+” to add your device. Scan the QR code on the back of the device, or manually enter the serial number.



Add your device



Scan the QR code

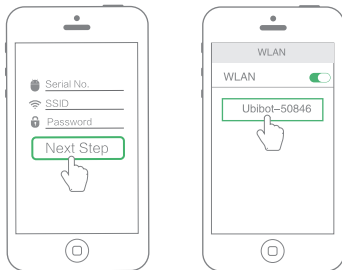
## WiFi SETUP

### STEP2.

Put your device into device setup mode (see p.06). The indicator should flash alternately red and green and the AP icon is shown on the screen.

### STEP3.

The device will ask you to enter your WiFi password. Check that the correct SSID is selected and enter the password. The App will now prompt you to go to your phone settings screen. Change to the UbiBot-xxx network and return to the App.



## WiFi SETUP

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### STEP4.

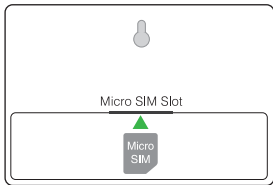
The device will now complete the setup process, register with the server and do the initial data sync. Your phone will automatically switch back to its normal WiFi network. If the connection failed, repeat the process and ensure you entered the correct WiFi details in step 3.



## MOBILE DATA\* SETUP

Before you set up the device on mobile data, please check the APN information of the SIM card used for the Ubibot device.

An APN (Access Point Name) provides the details your device needs to connect to mobile data through your network operator. APN details differ by network and you will need to get these from your network operator.



Insert a Micro SIM card into the slot

\* Depending on the specific model purchased.



## MOBILE DATA\* SETUP

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### STEP1.

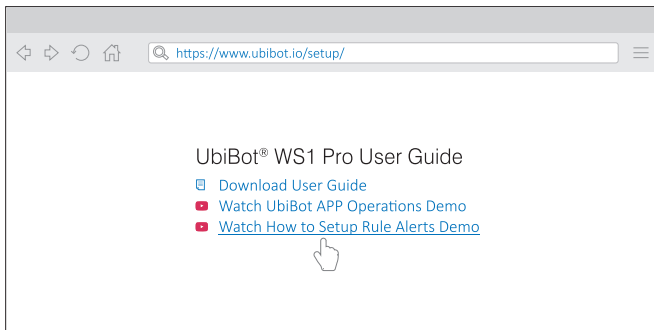
With the device off, insert your SIM card as indicated in the back of the device. Power the device on, then put it into Device Setup Mode (see p.06)

### STEP2.

Launch the app and log in. Tap the "+" to start setting up the device. Please follow the in-app instructions to complete the setup process. Please note, the setup will fail if you don't have data allowance.

## ONLINE DATA MANAGEMENT

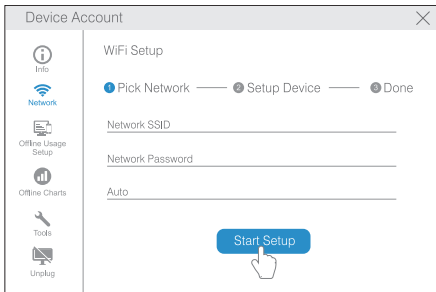
After the setup, you can view the sensor readings via the UbiBot app or the web console. For detailed operations such as configuring the data sync interval and creating alerts, please visit [www.ubibot.io/setup/](https://www.ubibot.io/setup/) to watch demonstration videos.



## SETUP VIA PC TOOLS

### STEP1.

Launch the App and log in. With the device switched on, use the Micro USB cable provided to connect your device via USB1 to the computer. The Tools will automatically scan your device and enter device page.



### STEP2.

Click "Network" on the left menu bar. There you are able to set up the device on WiFi or mobile data.





## ERROR CODES

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- 01 System Protection  
Please follow the instructions to properly configure the device. Unconfigured devices will revert to system protection mode to save power.
- 02 WiFi Connection Failed  
Please refer to the Troubleshooting section 2 on page 20.
- 03 Failed to Connect to Server  
This error code usually occurs due to WiFi disconnected or no SIM card. Please check the reason for error 2 or error 8.
- 04 Device Activation Failed  
Please refer to the Troubleshooting section 1 on page 19.
- 05 Data Save Failure  
This can happen when there is a power disruption while saving data when the power is disrupted while data is being saved.

## ERROR CODES

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-  06 Incorrect Data Format  
This can happen when there is a power disruption while saving data.
-  07 Data Sync Failed  
Please refer to the Troubleshooting section 2 on page 20.
-  08 No SIM Card Found  
Please check the SIM card is correctly inserted.
-  09 Mobile Data Network Failure  
Please check your SIM card is set up correctly and has been activated.

## TROUBLESHOOTING

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### 1. Device setup failure when using the UbiBot App

There are several factors that can affect the setup process. The followings are common issues:

- ① WiFi frequency: The Device can only connect to 2.4GHz networks, channels 1-13.
- ② WiFi password: Go through the device setup again (p.06) and ensure that you have set the correct WiFi password for the network.
- ③ WiFi security type: The Device supports OPEN, WEP, or WPA/WPA2 types.
- ④ WiFi channel width: Make sure it is set to 20MHz or "Auto".
- ⑤ Internet connection: Make sure your device's WiFi router has a working Internet connection (for instance, try to access [www.ubibot.io](http://www.ubibot.io) using a mobile connected to the same WiFi).
- ⑥ Battery problems: WiFi uses a lot of power. Your device may be able to power on but may not have enough power for the WiFi. Try to use the USB power supply.
- ⑦ Signal strength: Check you are in range for your WiFi, or if using mobile data, make sure you have a good signal.

## TROUBLESHOOTING

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For direct problem diagnosis, please use the PC Tools to go through the setup process and contact us with the response error code in Tools->Get Device Last Error. This can help us to remotely diagnose. You can download the software at [www.ubibot.io/setup/](http://www.ubibot.io/setup/)

### 2.Failure to Sync Data

Please check the following:

- ① Press the power button to manually sync data. If the indicator flashes green, then the sync is working. If it flashes red once then there is another problem. Try the next steps.
- ② Check that the device has sufficient battery power for the WiFi to work. WiFi takes a lot of power-- the device may be on, but unable to connect to the WiFi. We recommend you use Alkaline batteries instead of rechargeable or Carbon Zinc batteries, for better battery quality ensures optimal device's performance.
- ③ Make sure your device's WiFi router has a working Internet connection (for instance, try to access [www.ubibot.io](http://www.ubibot.io) using a mobile connected to the same WiFi).

## TROUBLESHOOTING

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④ If you are using mobile data, check that your SIM card is activated. If it is, check that your batteries or USB power connection are able to provide 2A current. Check if your mobile data allowance is used up.

### 3. Can I Use the Device without a Network Connection? How do I Access the Data?

The device will continue working without a network connection and can store up to 300,000 readings in its memory. Real-time readings are displayed on screen and you can access the data in the following ways:

- ① Move the device to an area where there is a WiFi connection which the device can connect to. Press the button to trigger a manual data sync. The indicator should flash green for a few seconds. You can now take the device back to the measurement location (Recommended).
- ② Use your mobile phone and enable Internet Connection Sharing. This can work well when your devices are installed in an area with limited or no WiFi coverage.



## TROUBLESHOOTING

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- ③ Use a laptop and the Micro USB cable to connect to the device manually. You can now perform a data export to your computer using the PC Tools.
- ④ Set it up with a mobile data card\* (see p.13). Once you are in range of the network, press the power button once to sync all data to the IoT platform.

### 4.The PC Tools failed to recognise the device

- ① Please check if you are using the USB cable provided in the packaging. Some other USB cable is not 4 wires which cannot offer data transmission.
- ② Please check if the USB cable connects to the on-board USB1 (upper port). The USB2 doesn't support PC connectivity.
- ③ Please remove the splitter if there is one connected.

\* Depending on the specific model purchased.

## TECHNICAL SUPPORT

The Ubibot team is glad to hear your voice of our products and services.



For any questions or suggestions, please feel free to create a ticket in the Ubibot app. Our customer service representatives respond within 24 hours and often in less than an hour. You can also contact the local distributors in your country for localized service. Please go to our website to view their contacts.

## PRODUCT CARE

- ✓ Please always follow the instructions contained in this manual.
- ☂ The device is not waterproof. Please keep away from water during operation, storage and shipping. The optional DS18B20 temperature probe is water proof.
- ⊕ Always mount the device on a stable surface.
- 🔥 Keep away from acidic, oxidising, flammable or explosive substances.
- ⊗ When handling the device, avoid using excessive force and never use sharp instruments to try and open it.



## WARRANTY INFORMATION

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1. This device is warranted to be free of defects in materials and workmanship for a period of up to one year from the original purchase date. This warranty does not cover damage caused by normal wear, misuse, abuse or incorrect repair. To claim under this limited warranty and to obtain warranty service, please contact customer service or local distributor to obtain instructions on how to pack and ship the product back to us.

2. The following situations will not be covered by the warranty:

- ① Issues arising after the warranty period has ended.
- ② Malfunction or damage caused by improper handling or not operating the device according to the instructions.
- ③ Damage occurring from operating device outside the recommended temperature and humidity range, damage from contact with water, damage from applying excessive force to the device or any cables and connectors.
- ④ Natural wear and aging of materials.
- ⑤ Failure or damage caused by unauthorized removal of the product.
- ⑥ We are only liable for faults due to manufacturing or design. We are not responsible for damage caused by Force Majeure or acts of God.

## WARRANTY CARD

Thank you for buying the UbiBot WS1 Pro. If you have any problems and wish to claim under the limited warranty, first contact our customer service team using the email address on the back of this book. If Customer Service asks you to return your product to us, please complete the following details and include this form in the package.

Product Details	
Product Name	
Product ID	
Product Serial No.	
Date of Purchase	
Online Purchase Store	
Customer Details	
Name	
Phone	
Address	
Email	

## REPAIR HISTORY

First Repair	Problems Description	Reason for Problems	Repair Description
	Date of Repair:		Repaired by:
Second Repair	Problems Description	Reason for Problems	Repair Description
	Date of Repair:		Repaired by:

⚠ Only to be completed by UbiBot technicians.