iWiscloud Smart Sensor version

Product Operating Manual

http://www.iwiscloud.com

【Warning】

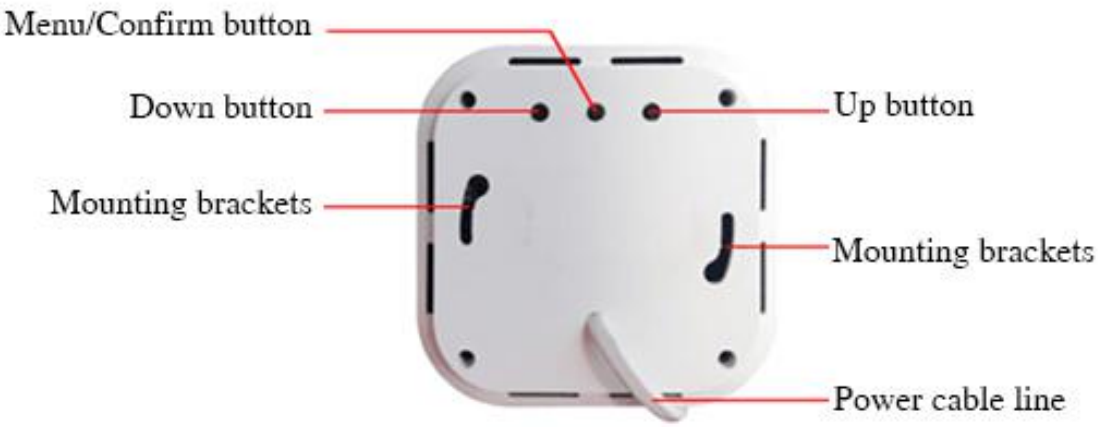
Please do not attempt to dismantle this delicate product, willful manipulation might lead to electrical failure. Warranty will be void if product is found to be tampered with.

【Notice】: As this product constantly improve, the pictorial diagram might be an indication of the actual product delivered. Wiscloud is grateful for your choice to purchase our iWiscloud smart sensors. For your safety and maximizing our product capabilities, we would highly encourage you to study this operation manual in details. Please safe keep this operation manual for future references.

1. Product Introduction

This product had been designed and manufactured in accordance to strict International safety standards and achieved CE certifications.

Side view



Back view

1.1. Product specifications

Smart Sensor	Model No.	Detection range	Accuracy
Oxygen	Wis-S-O_2	0 – 25%	±0.3%
Formaldehyde	Wis-S-CH	0 – 0.3mg/m^3	±0.002mg/m^3
PM2.5	Wis-S-PM2.5	0 – 500μg/m^3	±2μg/m^3
Carbon Monoxide	Wis-S-CO	0 – 600ppm	±0.3ppm
Carbon Dioxide	Wis-S-CO_2	350 – 6000ppm	±3ppm

Humidity/Temperature	Wis-S-TH	20-90%RH / 0-50°C	±2%RH / ±1°C
Other features	Luminosity, Sound level detection		
Operating voltage	AC 100-200V / 50-60Hz		
Energy consumption	1 – 2 W		
Display panel	LED display or Without display panel		
Dimension	Square (100mm*100mm*30mm) or Round (XX*XX*30mm)		

1.2. **Deployment**

iWiscloud smart sensor can be deployed individually or paired together with other iWiscloud smart home solution suite. If Wiscloud control center is deployed together, user can do remote monitoring and alert via the Internet cloud.

1.3. **Proposed deployed locations**

Home, Office, Luxury Hotel, Industrial buildings, Precise engineering / clean rooms or high-tech farms. Anywhere that you may require to monitor & alert or obtain precise information of the environment.

1.4. **Exterior design**

Our smart sensors (square or circular) shaped exterior shells are made up from Acrylonitrile-Butadiene-Styrene (ABS) plastic. It is strong, stable, durable, safe and resistant to heat and corrosion. The hive inspired air vents enhances aerodynamic flow and increases reading accuracy.

1.5. **Color Options**

Black, Silver, Pure White

1.6. **Display Panel Standby**

1. When the smart sensor detects continuous 5 minutes of low light (dark or darkness), it automatically goes into display panel standby mode. The display panel will emerge again when it detects visible light.
2. While in standby mode, if the smart sensor detects a quantitative change in noise or sensatory value, the display panel will also emerge.

1.7. **Product Feature Expansion**

1. Each smart sensor carries one RS-485 port interface, used commonly for industrial communication.

2. Each smart sensor is designed with two optional power relays [see section 2.13 for details] which can be used to power control other electronic products. These relays are activated whenever the smart sensor defined upper limit is exceeded.
3. Each smart sensor (other than the PM2.5 model) also has an option to provide a 4-20mA varying electric power source to a single target.
4. For the advanced smart sensor model, each smart sensor can also capture and perform relay of 315/433Mhz control signals.

2. Configuring iWiscloud Smart Sensor

In this section, we would explain on the configuration options, following settings -> configuration in chronological order.

2.1. **Main display screen**

1. The top value indicates the reading of the smart sensor detection attribute (depending on smart sensor model)
2. The next row with a loud speaker icon indicates the detected sound level. The higher the sound level detected, the more "_" would appear.
3. The last row indicates the luminosity level detected.
4. If the smart sensors are paired with iWiscloud control centre, the sensor exact readings can be obtained from the cloud as seen in below diagram.

5. The smart sensor will be occasionally blink in blue which indicate that it is operational.

2.2. **Version**

In this section, the smart sensor installed firmware version is displayed.

2.3. **Address Setting (Nebula)**

In this section, the smart sensor can be configured to communicate with iWiscloud control center. Each control center has its unique Nebula address value and the iWiscloud smart sensor MUST configure MATCHING Nebula address value for linkage. Please refer to iWiscloud control center operation manual in finding out the iWiscloud control center's unique Nebula address.

2.4. **Room Setting**

In this section, the smart sensor can be configured to be operating in one of the default location zone (within home). This is to facilitate for the iWiscloud control center in identifying the different smart sensors deployed in the different location within the home. By default, all smart sensors are set as room ID zero (0). Refer to below table for the other pre-defined zones.

Room ID (Default value from 0 to 7)：

0	1	2	3	4	5	6	7
Living room	Dining area	Kitchen	Main bedroom	Child room	Guest room	Study room	Toilet

2.5. **Warning audio**

In this section, the smart sensor can be configured to sound a warning audio when the defined limits are breached. Default value is off, which meant warning audio is off. Note: Regardless of the warning audio settings, the smart sensor will be blinking

in red light when the defined limits are breached, assuming the Warning status is turned on [see section 2.7].

2.6. **4-20mA output**

In this section, the smart sensor can be configured for direct proportion or inverse proportion for the 4-20mA output. For direct proportional, the constant power provided is proportional to the smart sensor reading, starting with 4mA at zero reading and 20mA at reading above the user defined threshold upper limit.

2.7. **Warning**

In this section, the smart sensor can be configured whether warning is activated when defined limits are breached. Default value is ‘‘on’’, which meant the smart sensor will blink in red light when defined limits are breached. However, when this setting is turned ‘‘off’’, regardless if the warning audio selection, the smart sensor will not indicate alert status. Also, when this setting is turned ‘‘off’’, all the power relays option will never be activated.

2.8. **Relay 315M/415M**

This option is only available for the advanced model. In this section, the smart sensor can be configured to do mess network relays for 315/415Mhz control signals.

2.9. **Exit**

This option exits from the configuration menu.

2.10. **Reset**

When this option is selected, the smart sensor performs a factory reset and restore all values to default.

2.11. **Calibration**

When this option is selected, the smart sensor performs an automated calibration of measured value.

2.12. Upper / Lower Limit settings

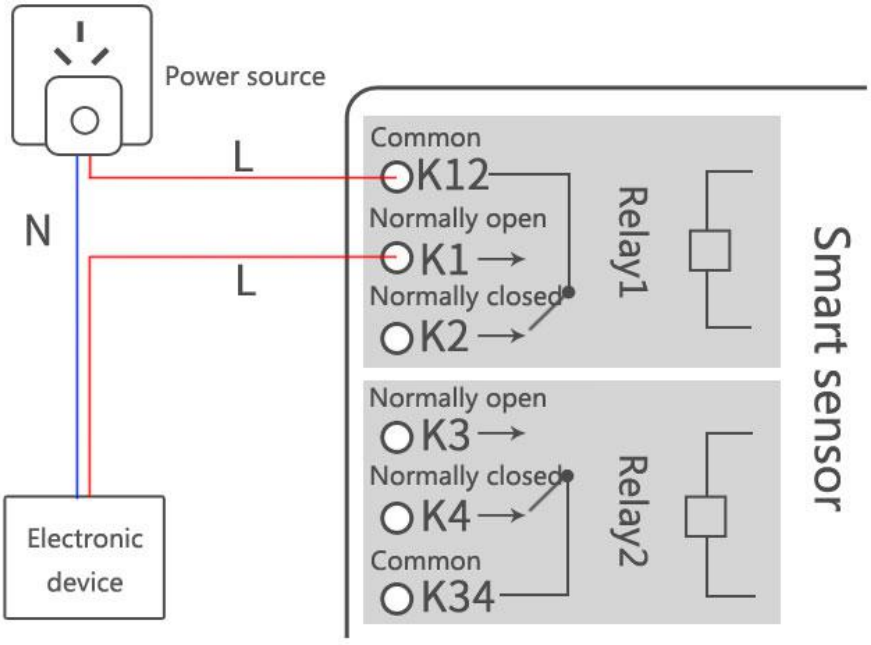
Depending on the smart sensor model, the upper / lower limit can be configured. Please see below table for the summary.

Smart Sensor	Model No.	Upper limit	Lower Limit	Ideal value
Oxygen	Wis-S-O_2	Y	N	N
Formaldehyde	Wis-S-CH	Y	N	N
PM2.5	Wis-S-PM2.5	Y	N	N
Carbon Monoxide	Wis-S-CO	Y	N	N
Carbon Dioxide	Wis-S-CO_2	Y	N	N
Humidity/Temperature	Wis-S-TH	Y	Y	Y

2.13. Setting up the electrical relays

Please note that the electronic relays only support up to ≤500W and it should be installed only by qualified trained electrician. The electrical relays are only activated when the user defined upper limit are met. (For the humiture model, the relays are activated when either the upper or lower limit threshold are breached). Do note that the warning option must be "ON" for this relay to be functional.

For power wiring connectivity, please connect up the devices with reference to the diagram below.



3. Points to note

- For accurate readings, please avoid install smart sensor in enclosed area.

- Please ensure the operating environment is between 0℃ to 50℃

- Please do not deploy the smart sensor within an enclosed metal cover as this will affect its wireless communication capabilities
- If multiple smart sensors are installed, please install them each at least 2cm apart.
- For best results, please install smart sensor 1.2m above floor level.
- Avoid exposing the smart sensor in highly corrosive environment (e.g. hydrosulfide, hydrochloric, alkali, halogenic, etc..)
- Avoid wetting the smart sensor hive surface area as it will reduce in device detection accuracy
- Avoid frosting the smart sensor hive surface area as it would damage the hive structure and permanently damage device capabilities.

4. Product listing

4.1. iWiscloud smart sensor x 1

4.2. Operating manual x 1

4.3. Wall fixture bracket x 1

4.4. Wall fixture screws x 2

4.5. Warranty card x 1

4.6. Product certification card x1

5. Warranty coverage

Wiscloud Singapore PTE LTD provides the following International warranty coverage for iWiscloud smart sensor:

Warranty Period	18 months
Scope of Warranty	Electronic parts & sensory module
Warranty Service	Carry in - one to one product exchange

- iWiscloud smart sensor is warranted for the specified Warranty Period from the date of original retail purchase (proof of receipt required) against defects in quality and materials under normal, non-commercial use.

Abnormal usage caused damage is not warranty covered. Wear and tear damage is also not warranty covered.

- Abnormal usage includes (force majeure), but limited to, deliberate damaging, disassembling, dismantle, manipulating warranty sticker, power overloading, water damaging or other man-made caused product damages.
- Wear and tear damage includes, but not limited to, exterior surface defects due to natural environmental cause and mishandling.
- This warranty does not cover missing accessories or external parts of the product. Such claim should be made within 3 days from the date of original retail purchase with the supplying agent.
- For the avoidance of doubt, minor imperfections within design specifications and that do not materially alter functionality of the product are not considered a defect under this warranty.

6. Company Information

Wiscloud Singapore PTE LTD
Address: 62 Ubi Road 1, Oxley Bizhub 2 #08-13, Singapore 408734
Website: http://www.iwiscloud.com
Email: support@iwiscloud.com

Wiscloud Singapore PTE LTD reserves its right in the terms and conditions interpretation found within this operational manual.

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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.