



Smart Sensor Series

Air Quality Detector

WAF4502.8600

1. Function Overview

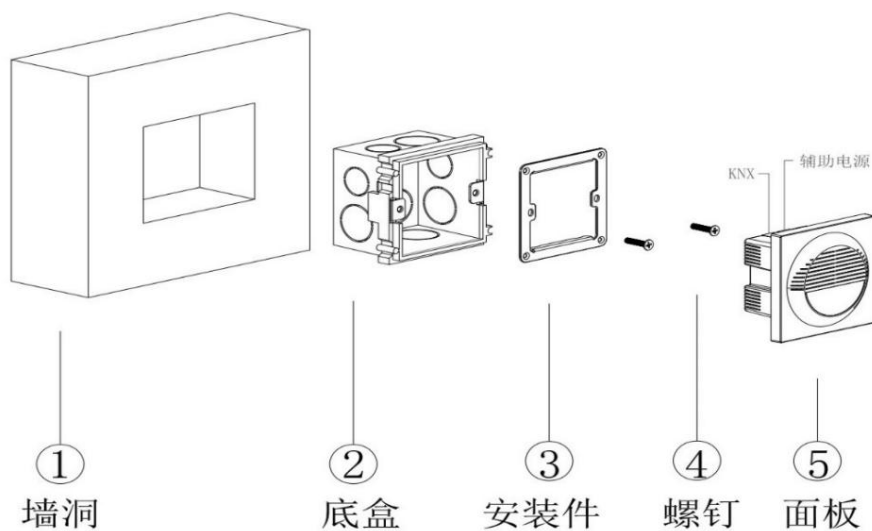
Indoor air quality detection is updated in real time, with accurate and direct access. PM2.5 concentration and air quality index are accurately read, and air temperature and humidity and micron particle detection are efficient and sensitive, taking only 1 second. The AQI level is clear at a glance, clean air, happy perception.

It provides multiple air detection methods, including real-time detection of formaldehyde, temperature, humidity, CO₂, VOC, air quality index (AQI), PM2.5 concentration, PM10 concentration and other data to safeguard the respiratory health of you and your family.



2. Installation Instructions

Installation diagram:



Installation steps:

1. Fix the mounting part to the standard bottom box with two M4*50mm screws. The bottom box needs to be fixed in the wall hole in advance; 2. Connect the red and black terminals according to the markings and insert them into the KNX port of the panel, and then connect the yellow and white terminals according to the markings and insert them into the auxiliary power supply port of the panel; 3. Buckle the panel into the mounting part for trial installation. After the trial installation is completed, debug the product and complete the installation.

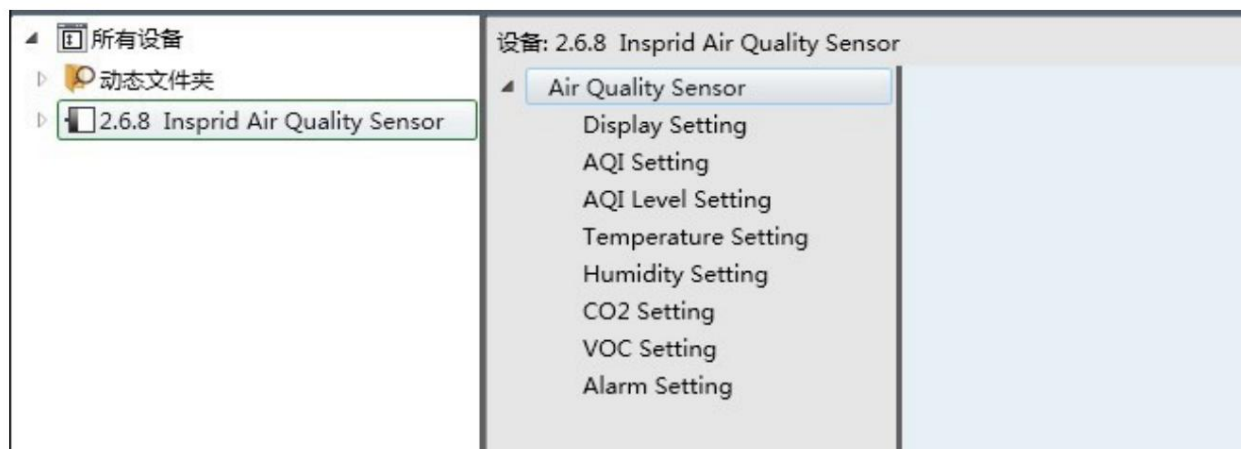
3. Technical parameters

Power supply mode	KNX-Bus bus power supply	Bus current	Bus	DC 21V...30V
	power consumption			12mA
	Auxiliary power			<360mW
	supply Rated power			DC 12V...30V
	consumption			<2W
Mechanical characteristics	Number of buttons			1-button programming key
	Programming			Download physical address
	button			Assigning physical addresses
	programming LED	Installation method		80 boxes/86 boxes
Connection method	KNX-TP1			Requires the use of twisted pair cables that comply with the KNX standard
	Terminal block			KNX-Bus dedicated terminal
interface display	LCD medium LCD backlight			Segment VA screen
	temperature			High Brightness LED
range operating temperature storage				-5C ⁰ ...45C ⁰
	temperature			-25C ⁰ ...55C ⁰
	transportation temperature			-25C ⁰ ...60C ⁰

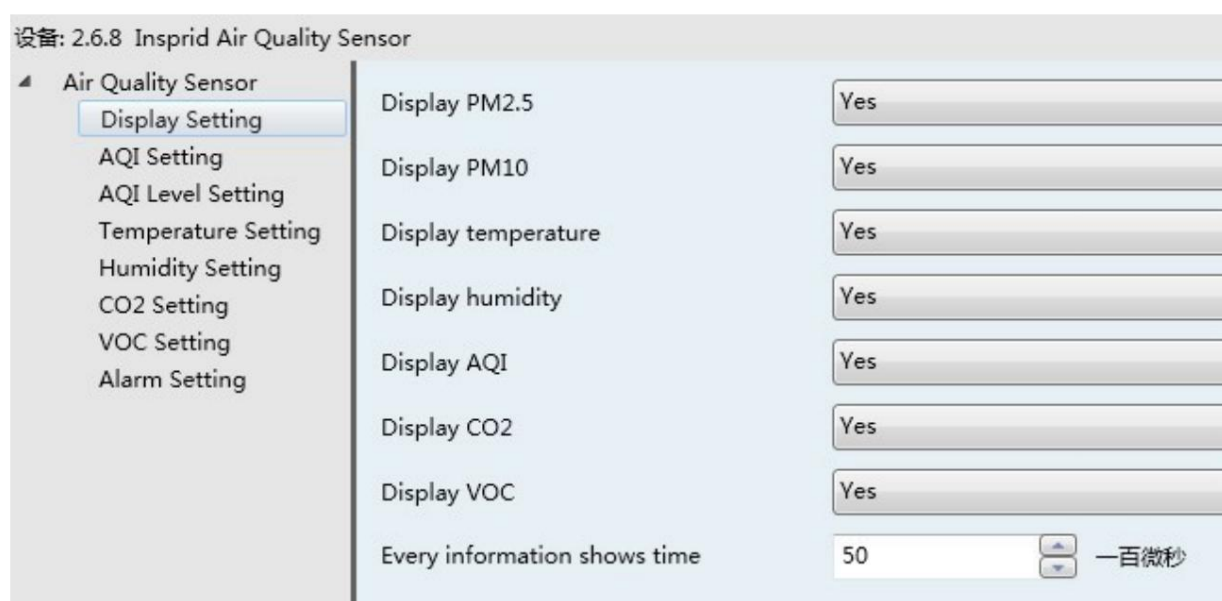
IV. ETS parameter configuration

1. The database is divided into eight pages, namely:

Display Setting	display setting
AQI Setting	AQI Settings
AQI Level Setting	AQI level setting
Temperature Setting	Temperature sensor settings
Humidity Setting	Humidity sensor settings
CO2 Setting	CO2 Sensor Setup
VOC Setting	VOC sensor settings
Alarm Setting	Alarm settings



2. Display Setting



Display options:

Display PM2.5 Display

PM2.5 Display

PM10 Display temperature

PM10 Display

Display humidity Display AQI Display

temperature display

CO2 Display VOC Display Yes

Humidity display

Air quality display

Carbon dioxide display

Fine particle display

No

Select "No" to deactivate this display.

Parameter "Every information shows time"

This parameter sets the display time of each detection data, and the setting value is T×100ys.

3. AQI Setting

Air Quality Sensor Display Setting AQI Setting AQI Level Setting Temperature Setting Humidity Setting CO2 Setting VOC Setting Alarm Setting	PM2.5/PM10 data collection	100% Internal data
	PM2.5/PM10 data output	No send
	AQI standad	Chinese Standard
	AQI output	No send

Parameter “PM2.5/PM10 data collection”

This parameter sets the data source of PM2.5/PM10, uses data from internal or external sensors, and sets the proportion of internal data;

Optional:

- 100% Internal data
- 90% Internal data+10% External data
- 80% Internal data+20% External data
- 70% Internal data+30% External data
- 60% Internal data+40% External data
- 50% Internal data+50% External data
- 40% Internal data+60% External data
- 30% Internal data+70% External data
- 20% Internal data+90% External data
- 10% Internal data+90% External data
- 100% External data

When using an external sensor, parameters will appear to set the data type of the external input parameter. Options: 2-

Octet Unsigned Value(7.001)

Two-byte unsigned integer

2-Octet Float Value (9.008)

Two-byte floating point number

序号	名称	对象功能	描述	群组地址	长度	C	R	W	T	U	数据类型	优先级
4	PM10	External data input			2字节	C	-	W	T	U	pulses	低
3	PM2.5	External data input			2字节	C	-	W	T	U	pulses	低

Parameter “PM2.5/PM10 data output”

This parameter sets the data output of PM2.5/PM10

Mode; Optional:

- | | |
|-------------------------|-----------------------------|
| No send | No output |
| Cycle output | Loop Output |
| Change output | Changing the output |
| Cycle and change output | Looping and changing output |

When cycle output is selected, the cycle time parameter (PM2.5/PM10 cycle output time) of the cycle output will appear.

Select the setting parameter for the minimum change amount that will appear when changing the output (PM2.5/PM10 min. change value).

PM2.5/PM10 data output	Cycle and change output
PM2.5/PM10 min. change value	30
PM2.5/PM10 cycle output time	10 秒
DPT of PM2.5/PM10 data	2-Octet Unsigned Value (7.001)

When selecting data output, the data type of the output parameter will be set. Optional:

2-Octet Unsigned Value(7.001)

Two-byte unsigned integer

2-Octet Float Value (9.008)

Two-byte floating point number

序号	名称	对象功能	描述	群组地址	长度	C	R	W	T	U	数据类型
6	PM10	Data output			2字节	C	R	-	T	U	parts/million (ppm)
5	PM2.5	Data output			2字节	C	R	-	T	U	parts/million (ppm)

Parameter "AQI standard"

This parameter sets the data calculation standard for AQI.

Optional:

Chinese Standard

National Standard

American Standard

The AQI (Air Quality Index) data is calculated based on the PM2.5 and PM10 data.

The maximum value of AQI data is 500. The calculation standards are divided into national standards and American standards. There are some differences in the data calculated by the two methods.

Parameter "AQI output"

This parameter sets the AQI data output mode.

Optional:

No send

No output

Cycle output

Loop Output

Change output

Changing the output

Cycle and change output

Looping and changing output

When the loop output is selected, the loop output time parameter (AQI cycle output time) will appear.

The setting parameter for the minimum change that will occur when changing the output (AQI min. change value).

AQI standad	Chinese Standard
AQI output	Cycle and change output
AQI min. change value	10
AQI cycle output time	5 秒

4. AQI Level Setting

设备: 2.6.8 Inspird Air Quality Sensor

<ul style="list-style-type: none"> Air Quality Sensor Display Setting AQI Setting AQI Level Setting Temperature Setting Humidity Setting CO2 Setting VOC Setting Alarm Setting 	AQI level division:	level 1: 0~50; level 4: 151~200;	level 2: 51~100; level 5: 201~300;	level 3:101~150; level 6: >300;
	AQI level output	No send		
	AQI alarm level	Level 3		
	No alarm send data enable	No send		
	Alarm send data enable	No send		
	AQI level control output			
	Level 1 output enable	Not output		
	Level 2 output enable	Not output		
	Level 3 output enable	Not output		
	Level 4 output enable	Not output		
	Level 5 output enable	Not output		
	Level 6 output enable	Not output		

The AQI level is divided into 6 levels according to the standard, corresponding to the pollution level: excellent, good, lightly polluted, moderately polluted Polluted, heavily polluted, severely polluted. The AQI level division shows the AQI parameter range corresponding to the AQI level:

Take 1~50

Level 2 51~100

Level 3 101~150

Take 151~200

Level 5 201~300

Level 6 >300

Parameter "AQI level output" This

parameter sets the data output mode of the AQI level.

Optional:

No send

No output

Cycle output

Loop Output

Change output mode

AQI level output	Cycle output
AQI cycle output time	5 秒

AQI level output object is:

序号	名称	对象功能	描述	群组地址	长度	C	R	W	T	U	数据类型	优先级
8	AQI level	Data output			1字节	C	R	-	T	U		低

Parameter "AQI alarm level"

This parameter sets the AQI level at which the alarm value is output.

AQI alarm level	Level 3
No alarm send data enable	No send
Alarm send data enable	No send

Parameters "No alarm send data enable" and "Alarm send data enable"

This parameter sets the output mode when the AQI level reaches the alarm value and when there is no alarm.

Optional:

No send	No output
Cycle output	Loop Output
Change output	Changing the output
Cycle and change output	Looping and changing output

When cycle output is selected, the cycle output time parameter and the corresponding data output will appear.

Output type.

AQI alarm level	Level 3
No alarm send data enable	Cycle output
No Alarm send Value:	
1 bit	0
4 bits	0
1 byte	0
Alarm send data enable	No send
Cycle output time	16 秒

AQI alarm output objects are:

序号	名称	对象功能	描述	群组地址	长度	C	R	W	T	U	数据类型
9	AQI Alarm	1bit value output			1位	C	R	-	T	U	
11	AQI alarm	1byte value output			1字节	C	R	-	T	U	
10	AQI alarm	4bits value output			4位	C	R	-	T	U	

Parameter "AQI level control output"

AQI level control output, this parameter can set the output data when the AQI value reaches each level. Options: Not output

Yes, by

change

No output

Change output

AQI level control output

Level 1 output enable

Yes, by change

Level 1 output 1 bit

0

Level 1 output 4 bits

0

Level 1 output 1 byte

0

When you choose to change the output, the corresponding data output type will appear.

序号	名称	对象功能	...	C	R	W...	T	U	数据类型
13	AQI level control output	4bits value output	4位	C	R	-	T	U	3-bit controlled
14	AQI level control output	1byte value output	1字	C	R	-	T	U	8-bit unsigned value
12	AQI level control output	1bit value output	1位	C	R	-	T	U	1-bit

5. Temperature Sensor Setting

设备: 2.6.8 Insprid Air Quality Sensor

- Air Quality Sensor
- Display Setting
- AQI Setting
- AQI Level Setting
- Temperature Setting**
- Humidity Setting
- CO2 Setting
- VOC Setting
- Alarm Setting

Temperature data collection

100% Internal data

Temperature calibration(1/10 °C)

0

Temperature output mode

No send

High temperature alarm value(1/10 °C)

350

No high temperature alarm output mode

No send

High temperature alarm output mode

No send

Low temperature alarm value(1/10 °C)

60

No low temperature alarm output mode

No send

Low temperature alarm output mode

No send

Parameter "Temperature data collection"

This parameter sets the temperature sensor data source, uses internal or external sensor data, and sets the proportion of internal data.

Optional:

- 100% Internal data
- 90% Internal data + 10% External data
- 80% Internal data + 20% External data
- 70% Internal data + 30% External data
- 60% Internal data + 40% External data
- 50% Internal data + 50% External data
- 40% Internal data + 60% External data
- 30% Internal data + 70% External data
- 20% Internal data + 90% External data
- 10% Internal data + 90% External data
- 100% External data

Parameter "Temperature calibration (1/10°C)"

This parameter sets the internal temperature compensation. Some panels are not installed in the middle of the room, but in a corner.

The temperature here may be inconsistent with the temperature sensed by the human body, so it is necessary to compensate for the temperature and increase or decrease the collected feedback.

The coming temperature.

Parameter "Temperature output mode" This parameter sets the data output mode of the temperature sensor.

- | | |
|-------------------------|-----------------------------|
| No send | No output |
| Cycle output | Loop Output |
| Change output | Changing the output |
| Cycle and change output | Looping and changing output |

When cycle output is selected, the cycle time parameter of the cycle output (Temperature cycle output time) will appear.

When the change output is selected, the setting parameter for the minimum change amount (Temperature min. change value) will appear.

The output object corresponding to temperature is:

Parameter "High temperature alarm value (1/10°)"

This parameter sets the high temperature protection.

High temperature alarm value(1/10 °C)	350
No high temperature alarm output mode	No send
High temperature alarm output mode	No send

“No high temperature alarm output mode” “High temperature alarm output mode”

This parameter sets the output mode when the high temperature reaches the alarm value and when there is no alarm.

Optional:

No send	No output
Cycle output	Loop Output
Change output	Changing the output
Cycle and change output	Looping and changing output

When selecting the cycle output, the cycle time parameters of the cycle output will appear (Temperature alarm cycle output time) and the corresponding data output type.

序号	名称	对象功能	描述	...	长度▲	C	R	W	T	U
17	High temperature alarm output	1 bit value output			1位	C	R	-	T	-
18	High temperature alarm output	4 bits value output			4位	C	R	-	T	-
19	High temperature alarm output	1 byte value output			1字节	C	R	-	T	-

Parameter "Low temperature alarm value (1/10)"

This parameter sets low temperature protection.

Low temperature alarm value(1/10 °C)

No low temperature alarm output mode

No send

Low temperature alarm output mode

No send

“No low temperature alarm output mode” “Low temperature alarm output mode”

This parameter sets the output mode when the high temperature reaches the alarm value and when there is no alarm.

Optional:

No send	No output
Cycle output	Loop Output
Change output	Changing the output
Cycle and change output	Looping and changing output

When selecting the cycle output, the cycle time parameters of the cycle output will appear (Temperature alarm cycle output time) and the corresponding data output type

序号	名称	对象功能	描述	长度▲	...	R	W	T	U
20	Low temperature alarm output	1 bit value output		1位	C	R	-	T	-
21	Low temperature alarm output	4 bits value output		4位	C	R	-	T	-
22	Low temperature alarm output	1 byte value output		1字节	C	R	-	T	-

6. Humidity Sensor Setting

设备: 2.6.8 Insprid Air Quality Sensor

Air Quality Sensor Display Setting AQI Setting AQI Level Setting Temperature Setting Humidity Setting CO2 Setting VOC Setting Alarm Setting	Humidity data collection	100% Internal data
	Humidity calibration(1%)	0
	Humidity output mode	No send
	<hr/>	
	High humidity alarm value(1%)	90
	No high humidity alarm output mode	No send
	High humidity alarm output mode	No send
	<hr/>	
	Low humidity alarm value(1%)	20
	No low humidity alarm output mode	No send
Low humidity alarm output mode	No send	

Parameter “Humidity data collection”

This parameter sets the humidity sensor data source, uses internal or external sensor data, and sets the proportion of internal data; Options:

- 100% Internal data
- 90% Internal data+10% External data
- 80% Internal data+20% External data
- 70% Internal data+30% External data
- 60% Internal data+40% External data
- 50% Internal data+50% External data
- 40% Internal data+60% External data
- 30% Internal data+70% External data
- 20% Internal data+90% External data
- 10% Internal data+90% External data
- 100% External data

Parameter "Humidity calibration (1/10°C)"

This parameter sets the internal humidity compensation. Some panels are not installed in the middle of the room, but in a corner.

The humidity in the air may be inconsistent with the humidity sensed by the human body. In this case, it is necessary to compensate for the humidity and increase or decrease the collected humidity. humidity.

Parameter "Humidity output mode"

This parameter sets the data output mode of the humidity sensor.

No send	No output
Cycle output	Loop Output
Change output	Changing the output
Cycle and change output	Cycle and change output

When the humidity output is selected, the humidity cycle output time parameter will appear.

When the humidity output is changed, the minimum change setting parameter (Humidity min. change value) will appear. The humidity output object is:

序号	名称	对象功能	描述	长度	...	R	W	T	U	数据类型
24	Humidity	Humidity output		1字节	C	R	-	T	U	percentage (0..100)

Parameter "High humidity alarm value (1%)"

This parameter sets high humidity protection. A command can be sent when the humidity exceeds a certain value.

High humidity alarm value(1%)	<input type="text" value="90"/>
No high humidity alarm output mode	<input type="text" value="Cycle and change output"/>
No high humidity alarm send value:	
1 bit	<input type="text" value="0"/>
4 bits	<input type="text" value="0"/>
1 byte	<input type="text" value="0"/>
High humidity alarm output mode	<input type="text" value="No send"/>

"No high humidity alarm output mode" "High humidity alarm output mode"

This parameter sets the output mode when the high humidity reaches the alarm value and when there is no alarm. The options are:

No send	No output
Cycle output	Loop output
Change output	Changing the output
Cycle and change output	Looping and changing output

When cycle output is selected, the cycle time parameter of the cycle output (Temperature alarm cycle output time) and the corresponding data output type will appear.

序号	名称	对象功能	描述	长度	C	R	W	T	U	数据类型
25	High humidity alarm output	1 bit value output		1位	C	R	-	T	-	
26	High humidity alarm output	4 bits value output		4位	C	R	-	T	-	
27	High humidity alarm output	1 byte value output		1字节	C	R	-	T	-	

7. CO2 Setting

设备: 2.6.8 Insprid Air Quality Sensor

Air Quality Sensor
Display Setting
AQI Setting
AQI Level Setting
Temperature Setting
Humidity Setting
CO2 Setting
VOC Setting
Alarm Setting

CO2 data collection: 100% Internal data
CO2 output mode: No send

CO2 alarm value: 90
CO2 no alarm output mode: No send
CO2 alarm output mode: No send

Parameter "CO2 data collection"

This parameter sets the source of CO2 sensor data, uses internal or external sensor data, and sets the proportion of internal data. Options:

- 100% Internal data
- 90% Internal data + 10% External data
- 80% Internal data + 20% External data
- 70% Internal data + 30% External data
- 60% Internal data + 40% External data
- 50% Internal data + 50% External data
- 40% Internal data + 60% External data
- 30% Internal data + 70% External data
- 20% Internal data + 90% External data
- 10% Internal data + 90% External data
- 100% External data

When using an external sensor, parameters will appear to set the data type of the external input parameter. Options:

- 2-Octet Unsigned Value(7.001)
- 2-Octet Float Value (9.008)

- Two-byte unsigned integer Two-
- byte floating point number

Parameter "CO2 output mode" This

parameter sets the data output mode of the CO2 sensor.

No send No output

Cycle output loop output

Change output Changing the output

Cycle and change output Cycle and change output

When cycle output is selected, the cycle time parameter of the cycle output (CO2cycle output time) will appear.

The setting parameter for the minimum change amount (CO2 min. change value) will appear during output.

CO2 output mode	Cycle and change output
CO2 min. change	30
CO2 cycle output time	5 秒
CO2 output DPT	2-Octet Unsigned Value (7.001)

When selecting output, the data type of the output parameter will be set. The options are:

2-Octet Unsigned Value(7.001) Two-byte unsigned integer

2-Octet Float Value (9.008) Two-byte floating point number

The output object of CO2 is:

序号	名称	对象功能	描述	长度	...	R	W	T	U	数据类
32	CO2	CO2 output		2字节	C	R	-	T	U	pulses

Parameter "CO2 alarm value"

This parameter sets the carbon dioxide alarm. When the CO1 concentration exceeds the set value, an alarm will be issued. The carbon dioxide concentration and human physiological response are as follows:

1. 350-450ppm: Same as general outdoor environment.
2. 350-1000ppm: The air is fresh and breathing is smooth.
3. 1000-2000ppm: The air feels turbid and you begin to feel drowsy.
4. 2000-5000ppm: Feeling headache, drowsiness, dullness, inability to concentrate, accelerated heartbeat, mild nausea.
5. Greater than 5000ppm: May cause severe hypoxia, resulting in permanent brain damage, coma, or even death.

CO2 alarm value	90	<input type="button" value="↑"/> <input type="button" value="↓"/>
CO2 no alarm output mode	Cycle and change output	
CO2 no alarm send value:		
1 bit	0	<input type="button" value="↑"/> <input type="button" value="↓"/>
4 bits	0	<input type="button" value="↑"/> <input type="button" value="↓"/>
1 byte	0	<input type="button" value="↑"/> <input type="button" value="↓"/>
CO2 alarm output mode	No send	
CO2 alarm cycle output time	30	<input type="button" value="↑"/> <input type="button" value="↓"/> 秒

“CO2 no alarm output mode” “CO2 alarm output mode”

This parameter sets the output mode when the carbon dioxide reaches the alarm value and when there is no alarm. Options:

No send	No output
Cycle output	Loop Output
Change output	Changing the output
Cycle and change output	Looping and changing output

When selecting the cycle output, the cycle time parameters of the cycle output will appear (Temperature alarm cycle output time) and the corresponding data output type.

序号	名称	对象功能	描述	长度	...	R	W	T	U	数据类型
34	CO2 alarm output	4 bits value output	4位	C	R	-	T	-		
35	CO2 alarm output	1 byte value output	1字节	C	R	-	T	-		
33	CO2 alarm output	1 bit value output	1位	C	R	-	T	-		

8. VOC sensor setting (VOC Setting)

VOC, or volatile organic compounds, including formaldehyde, ethanol, etc., are mainly emitted from household paints, adhesives, inks, etc.

设备: 2.6.8 Inspird Air Quality Sensor

Air Quality Sensor Display Setting AQI Setting AQI Level Setting Temperature Setting Humidity Setting CO2 Setting VOC Setting Alarm Setting	VOC data collection	100% Internal data
	VOC output mode	Cycle and change output
	VOC min. change	30
	VOC cycle output time	5 秒
	VOC output DPT	2-Octet Unsigned Value (7.001)
	VOC alarm value	90
	VOC no alarm output mode	No send
	VOC alarm output mode	No send

Parameter "VOC data collection" This parameter sets the source of CO2 sensor data, uses internal or external sensor data, and sets the proportion of internal data; Options:

- 100% Internal data
- 90% Internal data+10% External data
- 80% Internal data+20% External data
- 70% Internal data+30% External data
- 60% Internal data+40% External data
- 50% Internal data+50% External data
- 40% Internal data+60% External data
- 30% Internal data+70% External data
- 20% Internal data+90% External data
- 10% Internal data+90% External data
- 100% External data

When using an external sensor, parameters will appear to set the data type of the external input parameter.

Optional:

- | | |
|-------------------------------|--------------------------------|
| 2-Octet Unsigned Value(7.001) | Two-byte unsigned integer Two- |
| 2-Octet Float Value (9.008) | byte floating point number |

Parameter "VOC output mode"

This parameter sets the data output mode of the carbon dioxide sensor.

- | | |
|-------------------------|-----------------------------|
| No send | No output |
| Cycle output | Cycle output |
| Change output | Change output |
| Cycle and change output | Looping and changing output |

When cycle output is selected, the cycle time parameter of the cycle output (CO2cycle output time) will appear.

When output is selected, the output parameters will be set.

The data type of the number, optional:

2-Octet Unsigned Value(7.001)

Two-byte unsigned integer

2-Octet Float Value (9.008)

Two-byte floating point number

The output objects of VOC are:

序号	名称	对象功能	描述	长度	...	R	W	T	U	数据类型
37	VOC	VOC output		2字节	C	R	-	T	U	pulses

Parameter "VOC alarm value"

This parameter sets the VOC alarm value. If the VOC value is greater than this value, the VOC alarm object parameter will

issue the set alarm value.

This parameter sets the output mode when VOC reaches the alarm value and when there is no alarm. Options:

No send

No output

Cycle output

Loop Output

Change output

Changing the output

Cycle and change output

Looping and changing output

When selecting the cycle output, the cycle time parameters of the cycle output will appear (Temperature alarm cycle output time) and the corresponding data output type.

序号	名称	对象功能	描述	长度	C	R	W	T	U	数据类型
39	VOC alarm output	4 bits value output		4位	C	R	-	T	-	
40	VOC alarm output	1 byte value output		1字节	C	R	-	T	-	
38	VOC alarm output	1 bit value output		1位	C	R	-	T	-	

9. Alarm Setting

设备: 2.6.8 Inspird Air Quality Sensor

Air Quality Sensor

Display Setting

AQI Setting

AQI Level Setting

Temperature Setting

Humidity Setting

CO2 Setting

VOC Setting

Alarm Setting

ALarm enable

Enable

Alarm start signal

1 bit

1

4 bits

1

1 byte

1

Alarm stop signal

1 bit

0

4 bits

0

1 byte

0

Parameter "Alarm enable" This

parameter sets whether to enable the alarm function. Options:

Enable

Disable

Select "Enable" to enable the alarm function.

"Alarm start signal", "Alarm stop signal"

Input the value of the Alarm start signal parameter to the alarm input object, and the alarm will sound.

Entering the value set for the Alarm stop signal parameter will stop the alarm.