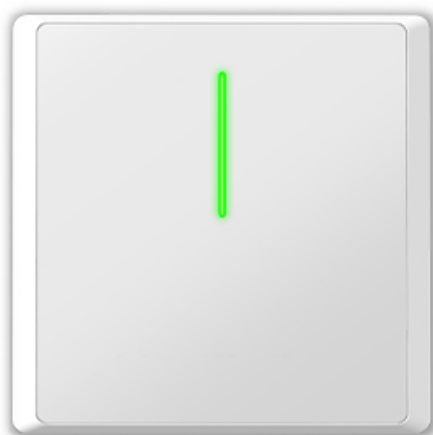




Product Specification

Power Supply	24VAC/DC(0.1A)
Wiring Terminal	24V、GND、RS485(A+、B-)、NTC10K/100K(S1、S2)
Breathing Light Indicator(Air Quality)	GOOD (green light), OK (yellow light), POOR (red light)
Communication	Modbus RTU, 2-wires(Dial-code address)
IP Class	IP21
Dimension	L86mm*W86mm*H12mm

Precautions:

Low-voltage and communication signal lines must not share the same conduit or trough with high-voltage power lines. Please refer to electrical wiring safety regulations.

Recommended Modbus gateway configuration:

Host reception timeout $\geq 1s$ Host read/write retry count ≥ 2 times Read/write one register per operation Minimum delay between characters $\geq 1s$ It is recommended that a single bus connect only one type of detector.

Function Specification

CO2	Measuring range (detection and display range): 400 ~ 2000ppm GOOD : Value $\leq 1000ppm$ OK : $1001 \leq \text{Value} \leq 1400ppm$ POOR Value $> 1400ppm$
PM2.5	Measuring range (detection and display range): 1 ~ 999 $\mu g/m^3$ GOOD: Value $\leq 75 \mu g/m^3$ OK: $75 \mu g/m^3 \leq \text{Value} \leq 115 \mu g/m^3$ POOR: Value $> 115 \mu g/m^3$
TVOC	Measuring range (detection and display range): 0 ~ 6.000 mg/m^3 GOOD: Value $\leq 0.600 mg/m^3$ OK: $0.610 mg/m^3 \leq \text{Value} \leq 1.000 mg/m^3$ POOR: Value $> 1.000 mg/m^3$
HCHO	Measuring range (detection and display range): 0 ~ 1.000 mg/m^3 GOOD: Value $\leq 0.100 mg/m^3$ OK: $0.110 mg/m^3 \leq \text{Value} \leq 0.300 mg/m^3$ POOR: Value $> 0.300 mg/m^3$
Inner Temperature & Humidity	Detection Range: $0^{\circ}C \sim +50^{\circ}C$ 10% ~ 95% RH Accuracy: $\pm 1^{\circ}C$ $\pm 5\%$
External Temperature (NTC 10K/ 100K)	Temperature Detection Range: $0^{\circ}C \sim +50^{\circ}C$
Storage Environment Temperature	$-10 \sim 60^{\circ}C$, 0 ~ 90% RH(Non-condensation)
Working Environment Temperature	$0 \sim 50^{\circ}C$, 0 ~ 80% RH(Non-condensation)



Notice :

HCHO (Formaldehyde): The equivalent eHCHO sensor may be affected by irritating gases such as perfume and alcohol.
CO₂ (Carbon Dioxide):
The equivalent eCO₂ sensor may be affected by irritating gases such as perfume and alcohol.

Modbus Protocol Communication Rules

Modbus RTU Configuration Name	Configuration Data
Baud Rate	9600bps
Parity	No Parity
Data Bits	8 data bits
Stop Bits	1 stop bits

Communication Protocol

(The standard MODBUS RTU data format contains fields for address information, function code, data field, and CRC checksum.
The read command is 0x03, and the write command is 0x06)

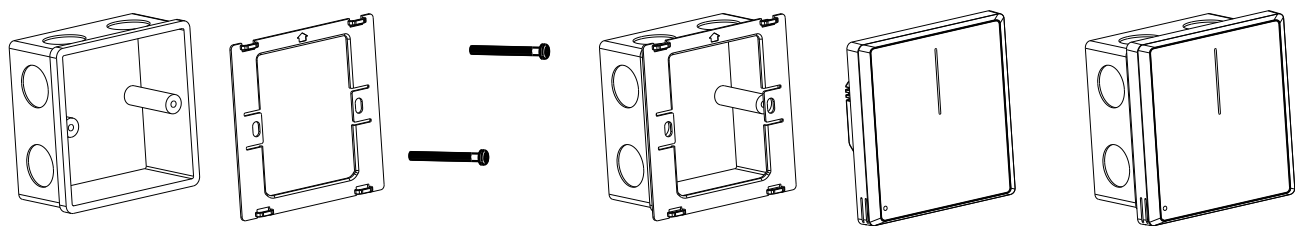
DIP Switch Address Setting

DIP Switch Address	BIT1	BIT2	BIT3	BIT4	BIT5	BIT6
1						
2	ON					
3		ON				
4	ON	ON				
Number 1~64 (The actual address is the DIP switch address plus 1, following the international standard)						

Description	Address (Register No.)	Functions	Value Description
Baud Rate	0000(40001)	R/W	0: 9600 1:19200 2:115200
Reserve	0001(40002)	R/W	Reserve
Reserve	0002(40003)	R/W	Reserve
NTC Type	0003(40004)	R/W	1: 10K 2: 100K
Temp Calibrate	0004(40005)	R/W	-10~10°C(Step 1°C) Stored as 16-bits Signed Integer
Humi Calibrate	0005(40006)	R/W	-20~20%(Step 1%) Stored as 16-bits Signed Integer
NTC Temperature Compensation (External Temperature Sensor)	0006(40007)	R/W	-10~10°C(Step 1°C) Stored as 16-bits Signed Integer
CO ₂ Calibrate	0007(40008)	R/W	-1000~1000ppm (Step 1ppm) Stored as 16-bits Signed Integer
PM _{2.5} Calibrate	0008(40009)	R/W	-100~100ug/m ³ (Step 1ug/m ³) Stored as 16-bits Signed Integer
TVOC Calibrate	0009(40010)	R/W	-2~2mg/m ³ (Step 0.01mg/m ³) Multiplied by 100, Stored as 16-bits Signed Integer
HCHO Calibrate	0010(40011)	R/W	-0.30~0.30mg/m ³ (Step 0.01mg/m ³) Multiplied by 100, Stored as 16-bits Signed Integer

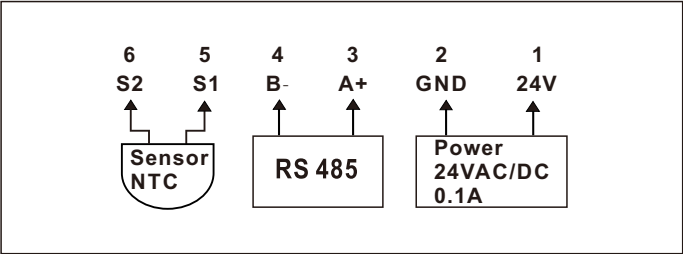
Description	Address(Register No.)	Functions	Value Description
Factory Reset	0011(40012)	R/W	0: Not Reset 1: Reset
Reserve	0012(40013)	R/W	Reserve
Breathing Light Indicator(Air Quality)	0013(40014)	R/W	0: Turn Off 1: Turn On (Factory default: Off)
Communication Address	0014(40015)	R	1~64 (No Address 0: The actual address is the international standard DIP switch address plus 1.)
Inner Temperature	0015(40016)	R	Stored as a 16-bit signed integer, the actual temperature value is obtained by dividing by 10. For example, the register value 0x0119 corresponds to a decimal value of 281, resulting in an actual temperature value of 28.1 degrees
Inner Humidity	0016(40017)	R	Stored as a 16-bits signed integer, the actual humidity value is obtained by dividing by 10; For example, the register value is 0x02C6 corresponds to a decimal value of 71.0%, resulting in an actual humidity of 71.0%
NTC Temperature (External Temperature Sensor)	0017(40018)	R	Stored as a 16-bit signed integer, the actual temperature value is obtained by dividing by 10. For example, the register value 0x0119 corresponds to a decimal value of 281, resulting in an actual temperature value of 28.1 degrees
CO2	0018(40019)	R	Stored as a 16-bit signed integer. For example, the register value 0x00A6 corresponds to a decimal CO2 concentration value of 166 ppm
PM2.5	0019(40020)	R	Stored as a 16-bit signed integer. For example, the register value 0x007D corresponds to a decimal PM2.5 concentration value of 125 µg/m³
TVOC	0020(40021)	R	Stored as a 16-bit signed integer, the actual TVOC value is obtained by dividing by 1000. For example, the register value 0x0070 corresponds to a decimal value of 112, resulting in an actual TVOC value of 0.112 mg/m³
HCHO	0021(40022)	R	Stored as a 16-bit signed integer, the actual HCHO value is obtained by dividing by 1000. For example, the register value 0x0050 corresponds to a decimal value of 80, resulting in an actual HCHO value of 0.080 mg/m³
Inner Temperature and Humidity Sensor Fault	0022(40023)	R	0: Normal 1: Erro Alarm
External Temperature Sensor Fault	0023(40024)	R	0: Normal 1: Erro Alarm
CO2 Sensor Fault	0024(40025)	R	0: Normal 1: Erro Alarm
TVOC Sensor Fault	0025(40026)	R	0: Normal 1: Erro Alarm
PM2.5 Sensor Fault	0026(40027)	R	0: Normal 1: Erro Alarm
HCHO Sensor Fault	0027(40028)	R	0: Normal 1: Erro Alarm
CO2 Quality Level	0028(40029)	R	1: GOOD 2: OK 3: POOR
PM2.5 Quality Level	0029(40030)	R	1:GOOD 2: OK 3: POOR
TVOC Quality Level	0030(40031)	R	1: GOOD 2: OK 3: POOR
HCHO Quality Level	0031(40032)	R	1: GOOD 2: OK 3: POOR
Gases Sens	0032(40033)	R/W	1: LOW 2: MID 3: HIG
Reserve	0033(40034)	R/W	Reserve
Sensor Operating Status	0034(40035)	R	0: Sleeping 1: Running; Working Cycle: 5 minutes (2 minutes running + 3 minutes sleeping)

Installation



1. Install Metal Backplate
2. Fix by Screw
3. Install Device Panel
4. Installed

Wiring Diagram



Dismsion

