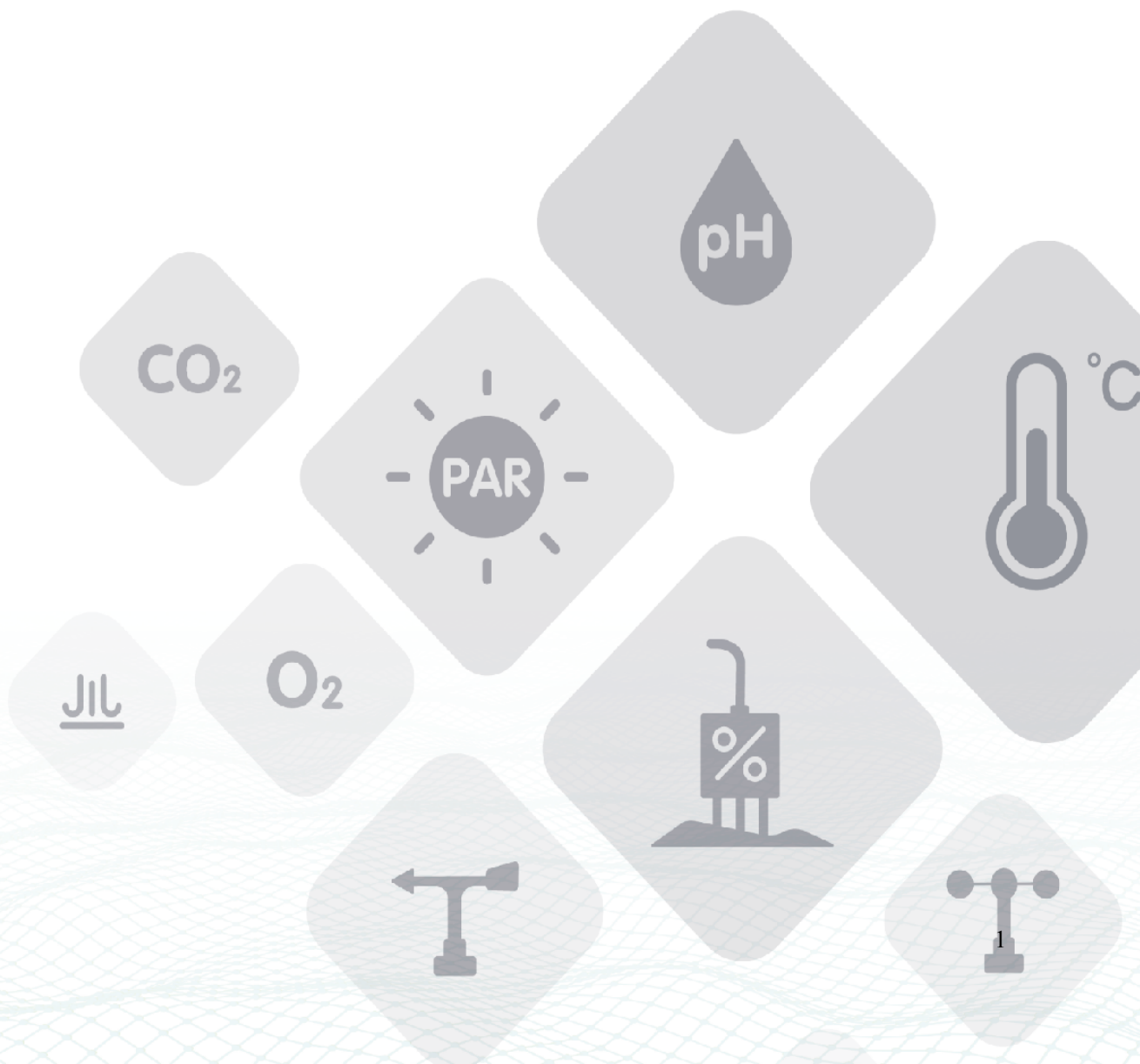




SENSECAP

RS485 VOC, NOx, Temperature and Humidity Sensor User Manual



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1 Introduction



RS485 VOC, NOx, Temperature and Humidity Sensor (S-AQI-01A) is a digital gas concentration sensor designed for easy integration into air purifiers or demand-controlled ventilation systems. It provides VOC and NOx based indoor air quality signals. The sensor is applicable for science research, warehousing and cold chain logistics, laboratory applications, and other environments where air quality monitoring is needed. The sensor uses RS485 physical interface with Modbus-RTU protocol for applications that require long cable runs or many sensors.

Features

- Integrated with Sensirion SGP41 air quality sensor for VOC and NOx index detection
- Long-term stability and long service life
- Integrated temperature, humidity, and dew point measurement
- RS485 communication interface with surge protection
- Wall mounting installation, small size, easy to install and integrate
- Low power consumption, suitable for battery-powered systems
- Reverse power protection and built-in TVS/ESD protection
- ODM/OEM service available

Applications

- Air purification systems
- Ventilation systems
- Indoor air quality monitoring
- Laboratory environmental monitoring

2 Specifications

Parameter	Specification
Output Interface	RS485, Modbus-RTU
Power Supply	5-28V DC
Power Consumption	RS485: Quiescent <5mA @12V DC, Max <10mA @12V DC
VOC Index	Range: 1-500, Resolution: 1
NOx Index	Range: 1-500, Resolution: 1
Temperature	Range: -40~125°C, Resolution: 0.01°C, Accuracy: ±0.2°C Note: The long-term operating temperature range is -40~80 ° C
Humidity	Range: 0-100% RH, Resolution: 0.01%, Accuracy: 1.8% RH
Operating Environment	Temperature: -40~80°C, Humidity: 0-95% RH (non-condensing)
IP Ratings	IP50
Installation	Wall mounting
Cable Length	2 meters or Customize
Dimension	Sensor body: 111*25.5mm (Length*Diameter)

2.1 Limitations on MOX based TVOC sensor

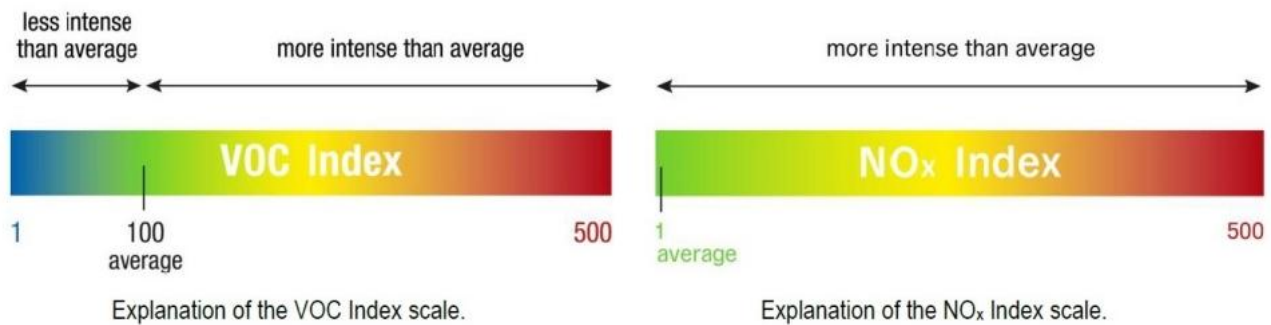
TVOC stands for total volatile organic compounds. It is by definition the sum of all VOCs present in a given environment. Most health-related indoor air quality levels, such as those published by the German Federal Environmental Agency or the WHO, as well as building norms such as RESET or LEED, refer to TVOC. To measure this accurately, an analytical device is needed that can selectively quantify hundreds of VOCs individually at the same time, such as a gas chromatograph. These devices are large and expensive and are not suited for consumer devices such as indoor air quality monitors or air purifiers.

The MOX sensors which are currently available on the market are not able to measure TVOC. They provide a signal that is proportional to the concentration of VOCs, but the sensitivity varies widely between different VOC species. This means that the same concentration of two different VOCs will result in very different sensor signals. As a result, the MOX sensor cannot provide a true TVOC measurement.

2.2 Features of VOC and NOx Index based sensor

To overcome the shortcomings of MOX technology, The sensor algorithm automatically adapts its outputs to any indoor environment and maps all VOC and NOx events to a VOC and NOx Index scale, respectively, ranging from 1 to 500 index points. In case of the VOC Index, a value of 100 refers to the average indoor gas composition over the past 24 h. While values between 100 and 500

indicate a deterioration, values between 1 and 100 inform about improvement of the VOC based air quality. In case of the NO_x Index, the average condition is mapped to a value of 1 and therefore, the NO_x Index displays values between 2 and 500 when NO_x events are present.



2.3 Accuracy

VOC and NO_x Sensing Performance

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Signal Range	VOC Index	1	N/A	500	VOC Index points
Output Signal Range	NO _x Index	1	N/A	500	NO _x Index points
Measurement range	Ethanol in clean air	0	N/A	1,000,000	ppb
Measurement range	NO ₂ in clean air	0	N/A	10,000	ppb
Specified range	Ethanol in clean air	500	N/A	10,000	ppb
Specified range	NO ₂ in clean air	50	N/A	650	ppb
Device-to-device variation	VOC Index	N/A	<±15 <±15	N/A	VOC Index points or % m.v. (the larger)
Device-to-device variation	NO _x Index	N/A	<±50 <±50	N/A	NO _x Index points or % m.v. (the larger)
Repeatability	VOC Index	N/A	<±5 <±5	N/A	VOC Index points or % m.v. (the larger)

Repeatability	NOx Index	N/A	<±5 <±5	N/A	NOx Index points or % m.v. (the larger)
Limit of detection	Ethanol in 500 ppb of ethanol and 0 ppb of NO2 in else clean air	N/A	N/A	<50 or <10	ppb or % of concentration setpoint (the larger)
Limit of detection	NO2 in 500 ppb of ethanol in else clean air	N/A	N/A	<20 or <10	ppb or % of concentration setpoint (the larger)
Response time τ63%	changing concentration from 5'000 to 10'000 ppb of ethanol at sampling interval of 1 s	N/A	<10	N/A	s
Response time τ63%	changing concentration from 150 to 300 ppb of NO2 at sampling interval of 1 s	N/A	<250	N/A	s
Switch-on behavior	Time until reliably detecting VOC or NOx events	N/A	<60	N/A	s
Switch-on behavior	VOC Index (Time until specifications in this table are met)	N/A	<1.5	N/A	h
Switch-on behavior	NOx Index (Time until specifications in this table are met)	N/A	<6	N/A	h
Sampling interval	N/A	N/A	1	N/A	s

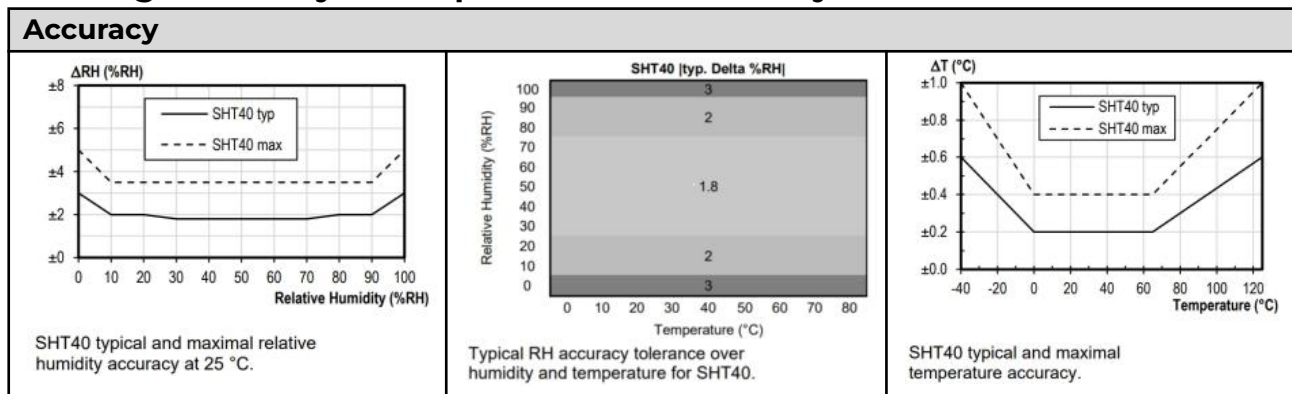
Temperature Sensing Performance

Parameter	Conditions	Value
Temperature measurement range	-	- 40~125 °C, 0.01°C
Accuracy (typ.)	typical	± 0.2 °C
Repeatability	typical	± 0.07 °C
Response time	τ63%	2 s
Accuracy drift	typical	< 0.03 °C / year

Humidity Sensing Performance

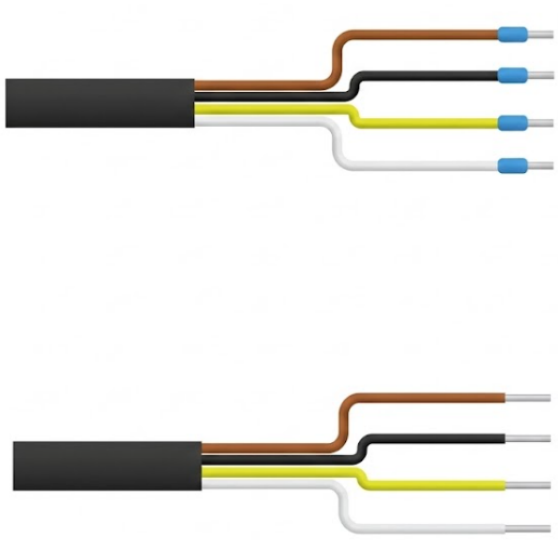
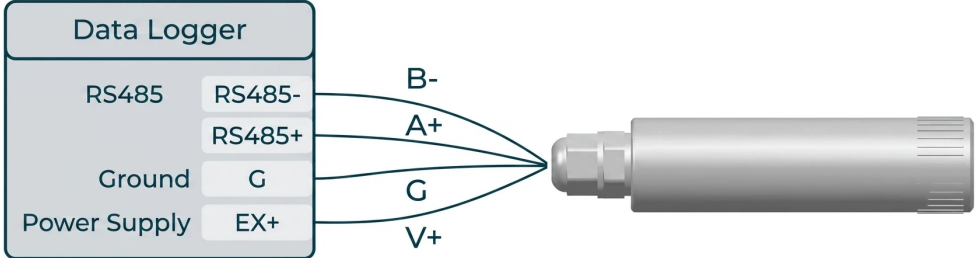
Parameter	Conditions	Value
Humidity measurement range	-	0~100 %RH, 0.01%RH
Accuracy (typ.)	typical	±1.8%RH
Repeatability	typical	±0.15 %RH
Response time	τ63%	6 s
Accuracy drift	typical	<0.25 %RH / year

Full range accuracy of temperature and humidity

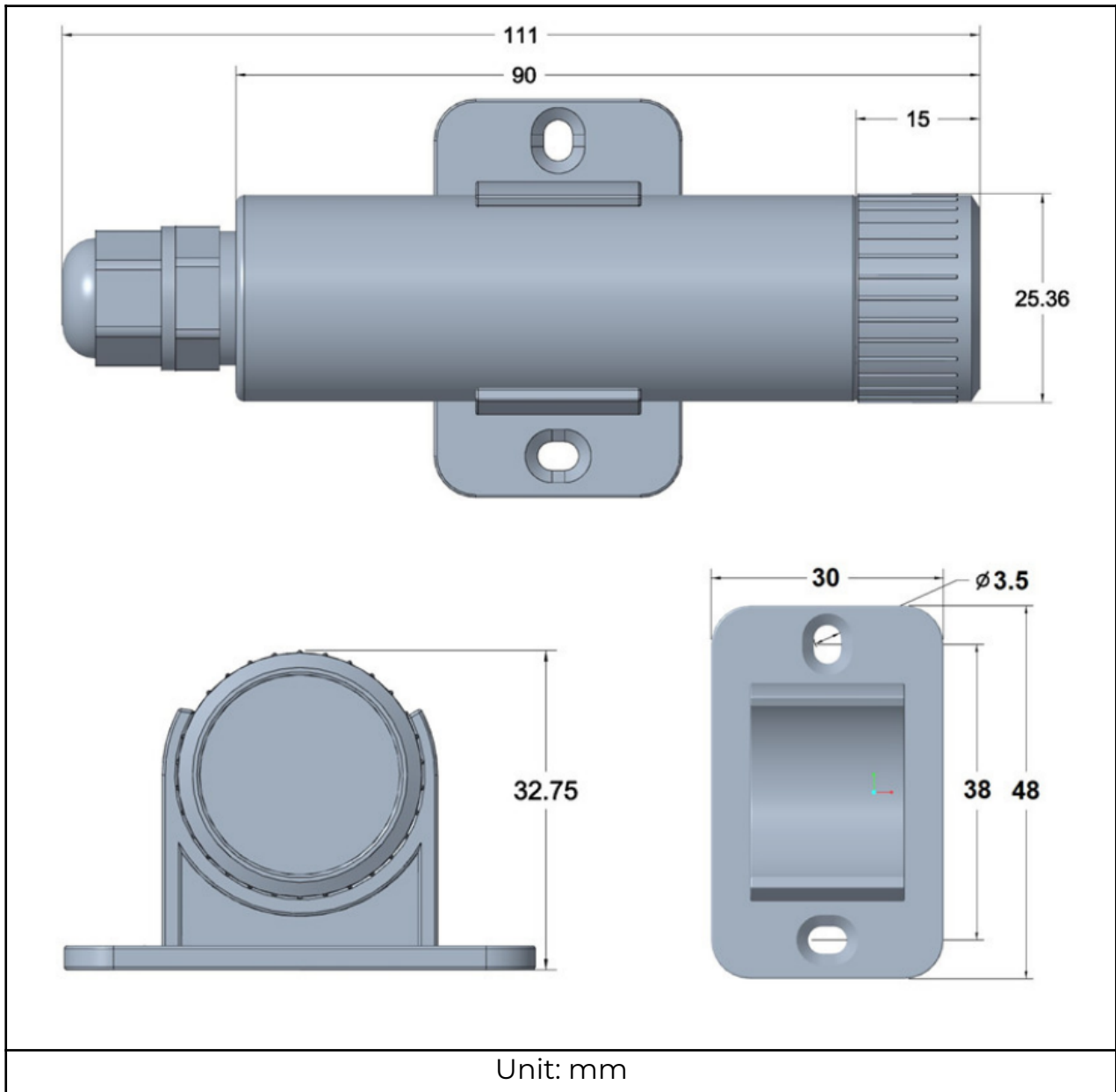


3 Wiring diagrams

The RS485 interface wiring is shown below:

Type	Wiring diagram
RS485 Interface	 RED: V+ Power Positive BLACK: G Power Ground YELLOW: RS485-A+ WHITE: RS485-B-
Connections	 Data Logger RS485 RS485- B- RS485+ A+ Ground G Power Supply EX+ V+

4 Dimensions



5 RS485 Communication

5.1 Modbus Protocol

Modbus Protocol is widely used to establish master-slave communication between intelligent devices or sensors. A MODBUS message sent from a master to a slave contains the address of the slave, the function code (e.g. 'read register' or 'write register'), the data, and a check sum (LRC or CRC).

The sensor is RS485 interface with Modbus protocol. The default serial communication settings is slave address 1, modbus rtu, 9600bps, 8 databits and 1 stop bit. All communication settings can be changed with modbus command, and take effective after re-power up the sensor.

Following modbus function code are supported by sensor.

Modbus Function Code 0x03 : used for reading holding register.

Modbus Function Code 0x04 : used for reading input register.

Modbus Function Code 0x06 : used for writing single holding register.

Modbus Function Code 0x10: used for writing multiple holding register.

5.2 Modbus Register

The following table lists all Modbus registers:

Parameters	Register Addr. (HEX/DEC)	Data Type	Modbus Function Code(DEC)	Range and Comments	Default Value
VOC Index(Calibrated by Temp. and Humi.) VOC_INDEX_CALIBED	0x0000 /0	UINT16 RO	3/4	1-500	N/A
NOx Index(Calibrated by Temp. and Humi.) NOX_INDEX_CALIBED	0x0001 /1	UINT16 RO	3/4	1-500	N/A
RESERVED	0x0002 /2	UINT16 RO	3/4	Reserved for future use	N/A
RESERVED	0x0003 /3	UINT16 RO	3/4	Reserved for future use	N/A

Temperature(Calibrated) TEMPRATURE_CALIBED	0x0004 /4	INT16 RO	3/4	-4000-12500 mapping to -40.00-125.00 (°C); -4000-25700 mapping to -40.00-257.00 (°F)	N/A
Humidity(Calibrated) HUMIDITY_CALIBED	0x0005 /5	INT16 RO	3/4	0-10000 mapping to 0.00-100.00 (%)	N/A
Dew point(Calibrated) DEWPOINT_CALIBED	0x0006 /6	INT16 RO	3/4	-10000-12500 mapping to -100.00-125.00 (°C) -14800-25700 mapping to -148.00-257.00 (°F)	N/A
RESERVED	0x0007 /7	INT16 RO	3/4	Reserved	0
RESERVED	0x0008 /8	INT16 RO	3/4	Reserved	0
RESERVED	0x0009 /9	INT16 RO	3/4	Reserved	0
RESERVED	0x000A /10	INT16 RO	3/4	Reserved	0
RESERVED	0x000B /11	INT16 RO	3/4	Reserved	0
RESERVED	0x000C /12	INT16 RO	3/4	Reserved	0
RESERVED	0x000D /13	INT16 RO	3/4	Reserved	0
RESERVED	0x000E /14	INT16 RO	3/4	Reserved	0
RESERVED	0x000F /15	INT16 RO	3/4	Reserved	0
VOC Index(Original) VOC_INDEX_CALIBED	0x0010 /16	UINT16 RO	3/4	1-500	N/A

NOx Index(Original) NOX_INDEX_CALIBERD	0x0011 /17	UINT16 RO	3/4	1-500	N/A
RESERVED	0x0012 /18	UINT16 RO	3/4	Reserved for future use	N/A
RESERVED	0x0013 /19	UINT16 RO	3/4	Reserved for future use	N/A
Temperature(Original) TEMPRATURE	0x0014 /20	INT16 RO	3/4	-4000-12500 mapping to -40.00-125.00 (°C); -4000-25700 mapping to -40.00-257.00 (°F)	N/A
Humidity(Original) HUMIDITY	0x0015 /21	INT16 RO	3/4	0-10000 mapping to 0.00-100.00 (%)	N/A
Dew point(Original) DEWPOINT	0x0016 /22	INT16 RO	3/4	-10000-12500 mapping to -100.00-125.00 (°C) -14800-25700 mapping to -148.00-257.00 (°F)	N/A
RESERVED	0x0017 /23	INT16 RO	3/4	Reserved	0
RESERVED	0x0018 /24	INT16 RO	3/4	Reserved	0
RESERVED	0x0019 /25	INT16 RO	3/4	Reserved	0
RESERVED	0x001A /26	INT16 RO	3/4	Reserved	0
RESERVED	0x001B /27	INT16 RO	3/4	Reserved	0
RESERVED	0x001C /28	INT16 RO	3/4	Reserved	0
RESERVED	0x001D /29	INT16 RO	3/4	Reserved	0
RESERVED	0x001E /30	INT16 RO	3/4	Reserved	0

RESERVED	0x001F /31	INT16 RO	3/4	Reserved	0
Temperature Unit TEMPUNIT	0x0020 /32	UINT16 R/W	3/6/16	0: °C 1: °F	0
Temperature Offset TOFFSET	0x0021 /33	INT16 R/W	3/6/16	-1000~1000 mapping to -10.00~ 10.00°C	0
Humidity Offset HUMIOFFSET	0x0022 /34	INT16 R/W	3/6/16	-1000~1000 mapping to -10.00~ 10.00%	0
Floating Point Register Byte Order FLOATBYTEORDER	0x0023 /35	INT16 R/W	3/6/16	Configure floating point register byte order. 0: Big-endian [ABCD] 1: Little-endian [DCBA] 2: Big-endian byte swap [BADC] 3: Little-endian byte swap[CDAB]	3
Modbus Slave Address ADDRESS	0x0200 /512	UINT16 R/W	3/6/16	0-255	1
RS485 baudrate BAUDRATE	0x0201 /513	UINT16 R/W	3/6/16	0-5 0: 1200bps 1: 2400bps 2: 4800bps 3: 9600bps 4: 19200bps 5: 38400bps	3: 9600b ps

RS485 Protocol PROTOCOL	0x0202 /514	UINT16 R/W	3/6/16	0 0: Modbus RTU	0: Modbus RTU
RS485 parity PARITY	0x0203 /515	UINT16 R/W	3/6/16	0-2 0: NONE 1: EVEN 2: ODD	0: NONE
RS485 data bits DATABITS	0x0204 /516	UINT16 R/W	3/6/16	1 1: 8 bits	1: 8 bits
RS485 Stopbits STOPBITS	0x0205 /517	UINT16 R/W	3/6/16	0-1 0: 1 stopbit 1: 2 stopbits	0: 1 stopbit
Reserved RESERVED	0x0206 /518	UINT16 R/W	3/6/16	Reserved	0
Reserved RESERVED	0x0207 /519	UINT16 R/W	3/6/16	Reserved	0
User Defined Serial Number USERSN	0x0220 /544 0x0221 /545 0x0222 /546 0x0223 /547	UINT16 R/W	3/16	0x00000000 00000000- 0xFFFFFFFF FFFFFFFF Those four registers should be read/write in one command.	N/A
VOC Index(Calibrated by Temp. and Humi.) VOC_INDEX_CALIBE D_FLOAT	0x1000 /4096	FLOAT RO	3/4	1-500	N/A
NOx Index(Calibrated by Temp. and Humi.) NOX_INDEX_CALIBE D_FLOAT	0x1002 /4098	FLOAT RO	3/4	1-500	N/A
RESERVED_FLOAT	0x1004 /4100	FLOAT RO	3/4	reserved for future use	N/A
RESERVED_FLOAT	0x1006 /4102	FLOAT RO	3/4	reserved for future use	N/A
Temperature(Calibrat	0x1008 /4104	FLOAT	3/4	-40.00-125.00	N/A

ed) TEMPRATURE_CALIB ED_FLOAT		RO		(°C); -40.00-257.0 0 (°F)	
Humidity(Calibrated) HUMIDITY_CALIBED_ FLOAT	0x100A /4106	FLOAT RO	3/4	0.00-100.00 (%)	N/A
Dew point(Calibrated) DEWPOINT_CALIBE D_FLOAT	0x100C /4108	FLOAT RO	3/4	-100.00-125.0 0 (°C) -148.00-257.0 0 (°F)	N/A
RESERVED_FLOAT	0x100E /4110	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1010 /4112	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1012 /4114	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1014 /4116	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1016 /4118	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1018 /4120	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x101A /4122	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x101C /4124	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x101E /4126	FLOAT RO	3/4	Reserved	0
VOC Index(Original) VOC_INDEX_CALIBE D_FLOAT	0x1020 /4128	FLOAT RO	3/4	1-500	N/A
NOx Index(Original) NOX_INDEX_CALIBE D_FLOAT	0x1022 /4130	FLOAT RO	3/4	1-500	N/A
RESERVED_FLOAT	0x1024 /4132	FLOAT RO	3/4	reserved for future use	N/A
RESERVED_FLOAT	0x1026 /4134	FLOAT RO	3/4	reserved for future use	N/A
Temperature(Origina l) TEMPRATURE_FLOA T	0x1028 /4136	FLOAT RO	3/4	-40.00-125.00 (°C); -40.00-257.0 0 (°F)	N/A

Humidity(Original) HUMIDITY_FLOAT	0x102A /4138	FLOAT RO	3/4	0.00-100.00 (%)	N/A
Dew point(Original) DEWPOINT_FLOAT	0x102C /4140	FLOAT RO	3/4	-100.00-125.00 (°C) -148.00-257.00 (°F)	N/A
RESERVED_FLOAT	0x102E /4142	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1030 /4144	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1032 /4146	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1034 /4148	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1036 /4150	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x1038 /4152	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x103A /4154	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x103C /4156	FLOAT RO	3/4	Reserved	0
RESERVED_FLOAT	0x103E /4158	FLOAT RO	3/4	Reserved	0

UINT16:16 bit unsigned integer

INT16:16bit signed integer

RO: Register is Read Only

R/W: Register is Read/Write

HEX: Hexadecimal (data with 0x/0X prefix)

DEC: Decimal

FLOAT: Floating point register, the byte order is configured by "Floating Point Register Byte Order, FLOATBYTEORDER" register. Please refer to "Modbus Register Detail Descripton" for more details.

The register value will be set as following when there is sensor error:

Error Value	Register Address	Error
-32768	VOC Index	sensor broken
-32768	NOx Index	sensor broken
-32768	Temperature value	sensor broken
-32768	Humidity value	sensor broken
-32768	Dew point value	sensor broken

5.3 Modbus Register Detail Description

VOC_INDEX_CALIBED: VOC Index(Calibrated by Temp. and Humi.), UINT16 VOC_INDEX: VOC Index (Original), UINT16		
Range	1-500	Default: N/A
Parameter Save	N/A	

Note: VOC index value

VOC_INDEX_CALIBED_FLOAT: VOC Index(Calibrated by Temp. and Humi.), FLOAT VOC_INDEX_FLOAT: VOC Index (Original), FLOAT		
Range	1-500	Default: N/A
Parameter Save	N/A	

Note: VOC index value. The byte order is configured by "Floating Point Register Byte Order, FLOATBYTEORDER" register.

NOX_INDEX_CALIBED: NOX Index(Calibrated by Temp. and Humi.), UINT16 NOX_INDEX: NOX Index (Original), UINT16		
Range	1-500	Default: N/A
Parameter Save	N/A	

Note: NOX index value

NOX_INDEX_CALIBED_FLOAT: NOX Index(Calibrated by Temp. and Humi.), FLOAT NOX_INDEX_FLOAT: NOX Index (Original), FLOAT		
Range	1-500	Default: N/A
Parameter Save	N/A	

Note: NOx index value. The byte order is configured by "Floating Point Register Byte Order, FLOATBYTEORDER" register.

TEMPERATURE_CALIBED: Temperature(Calibrated), INT16 TEMPERATURE: Temperature(Original), INT16		
Range	-4000-12500 mapping to -40.00-125.00 (Temperature Unit set to °C); -4000-25700 mapping to -40.00-257.00 (Temperature Unit set to °F)	Default: N/A
Parameter	N/A	

Save		
------	--	--

Note: Temperature measurement value

TEMPEATURE_CALIBED_FLOAT: Temperature(Calibrated), FLOAT		
TEMPERATURE_FLOAT: Temperature(Original), FLOAT		
Range	-40.00-125.00 (Temperature Unit set to °C); -40.00-257.00 (Temperature Unit set to °F)	Default: N/A
Parameter Save	N/A	

Note: Temperature measurement value. The byte order is configured by "Floating Point Register Byte Order, FLOATBYTEORDER" register.

HUMIDITY_CALIBED: Humidity(Calibrated), INT16		
HUMIDITY_FLOAT: Humidity(Original), INT16		
Range	0-10000 mapping to 0.00-100.00 (%)	Default: N/A
Parameter Save	N/A	

Note: Humidity measurement value

HUMIDITY_CALIBED_FLOAT: Humidity(Calibrated), FLOAT		
HUMIDITY_FLOAT: Humidity(Original), FLOAT		
Range	0.00-100.00 (%)	Default: N/A
Parameter Save	N/A	

Note: Humidity measurement value. The byte order is configured by "Floating Point Register Byte Order, FLOATBYTEORDER" register.

DEWPOINT_CALIBED: Dew point(Calibrated), INT16		
DEWPOINT_FLOAT: Dew point(Original), INT16		
Range	-10000-12500 mapping to -100.00-125.00 (Temperature Unit set to °C) -14800-25700 mapping to -148.00-257.00 (Temperature Unit set to °F)	Default: N/A
Parameter Save	N/A	

Note: Dew point measurement value

DEWPOINT_CALIBED_FLOAT: Dew point(Calibrated), FLOAT		
DEWPOINT_FLOAT: Dew point(Original), FLOAT		
Range	-100.00-125.00 (Temperature Unit set to °C); -148.00-257.00 (Temperature Unit set to °F)	Default: N/A
Parameter	N/A	

Save		
------	--	--

Note: Dew point measurement value. The byte order is configured by “Floating Point Register Byte Order, FLOATBYTEORDER” register.

TEMPUNIT: Temperature Unit		
Range	0: °C 1: °F	Default: 0
Parameter Save	YES	

Note: Temperature Unit.

TOFFSET: Temperature Offset, INT16		
Range	-1000~1000 mapping to -10.00~10.00°C	Default: 0
Parameter Save	YES	

Note: Temperature Offset.

TEMPRATURE_CALIBED = TEMPRATURE + TOFFSET;

TEMPRATURE_CALIBED_FLOAT = TEMPRATURE_FLOAT + TOFFSET / 100.00;

HUMIOFFSET: Humidity Offset, INT16		
Range	-1000~1000 mapping to -10.00~10.00%	Default: 0
Parameter Save	YES	

Note: Humidity Offset.

HUMIDITY_CALIBED = HUMIDITY + HUMIOFFSET;

HUMIDITY_CALIBED_FLOAT = HUMIDITY_FLOAT + HUMIOFFSET / 100.00;

FLOATBYTEORDER: Floating Point Register Byte Order, INT16		
Range	0: Big-endian [ABCD] 1: Little-endian[DCBA] 2: Big-endian byte swap [BADC] 3: Little-endian byte swap[CDAB]	Default: 3
Parameter Save	YES	

Note: Configure floating point register byte order.

Example: The 123456.00 in IEC754 is 0x47F12000 (A=47, B=F1, C=20, D=00), then

0: Big-endian [ABCD]

1: Little-endian[DCBA]

2: Big-endian byte swap [BADC]

3: Little-endian byte swap[CDAB]

SLAVEADDRESS: Modbus Slave Address, UINT16		
Data Range	0-255	Default: 1

Parameter Storage	YES	
-------------------	-----	--

Note: Please power up the sensor to take effective after set.

BAUDRATE: Serial Comm Baudrate, UINT16		
Data Range	0-5 0:1200bps 1:2400bps 2:4800bps 3:9600bps 4:19200bps 5:38400bps	Default: 3
Parameter Storage	YES	

Note: Please power up the sensor to take effective after set.

PROTOCOL: Serial Comm Protocol, UINT16		
Data Range	0 0:Modbus RTU	Default: 0
Parameter Storage	YES	

Note: Please power up the sensor to take effective after set.

PARITY: Serial Comm Parity, UINT16		
Data Range	0-2 0:NONE 1:EVEN 2:ODD	Default: 0
Parameter Storage	YES	

Note: Please power up the sensor to take effective after set.

DATABITS: Serial Comm Databits, UINT16		
Data Range	1 1:8 databits	Default: 1
Parameter Storage	YES	

Note: Please power up the sensor to take effective after set.

STOPBITS: Serial Comm Stopbits, UINT16		
---	--	--

Data Range	0-1 0:1 stopbit 1:2 stopbits	Default: 0
Parameter Storage	YES	

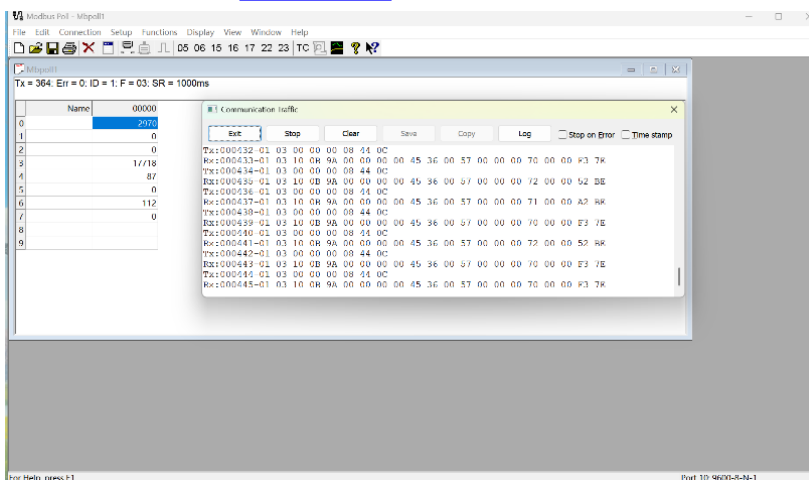
Note: Please power up the sensor to take effective after set.

USER_SN--- User Serial Number		
Data Range	0x0000000000000000-0xFFFFFFFFFFFF FFFF User Serial Number. These four registers should be read and write together from start address 0x0220 with quantity 4.	Default: N/A
Parameter Storage	YES	

5.4 Software Configuration Utility

Software: Modbus Poll

You can use the software listed below to try reading/ writing the register of the sensor. Click this link to [Download](#).



5.5 Command Example

5.5.1 Modify the Slave Address

Default Registers	1
Change Slave Address	05

Address	0x0200 (512)
Number of Registers	1
Function Code	0x06
Default Sensor Address	01

To change the Modbus device address of the sensor from 01 to 05, use the following command:

Example:

Send Command	01 06 02 00 00 05 48 71
Response	01 06 02 00 00 05 48 71

Note: The address is changed to 05 and saved after power-off

5.5.2 Modify the Baud Rate

Address	0x0201 (513)
Number of Registers	1
Function Code	0x06
Default Value	3 (9600bps)
Supported Values	0-5 (1200-38400bps)

The baud rate can be set via the upper computer and takes effect after re-powering the sensor. The baud rate is saved after power-off.

The integer values map to baud rates as follows:

Integer value	Baud Rate
0	1200bps
1	2400bps
2	4800bps
3	9600bps
4	19200bps
5	38400bps

Example:

Send Command	05 06 02 01 00 02 59 F7
Response	05 06 02 01 00 02 59 F7

Note: The baud rate is changed to 4800bps and saved after power-off

6 Version

Version	Date	Description	Editor
V1.0	2026-08-03	First Version	Janet Zhang