D679 CO2 Light Illumination Temperature Humidity 4in1 transmitter

1. Product Introduction

1.1. Description

This product is used to detect the temperature and humidity, illumination, and CO2 concentration in the current environment. And output through RS485 port and Modbus RTU protocol.

1.2. Features

- Wide range
- Easy to use, Easy installation
- Long transmission distance
- Good stability and anti-interface

1.3. Applications

- Greenhouse
- Photovoltaic power station
- Flower cultivation
- Factory workshop
- Pollutant emissions
- Laboratory

Guangzhou Logoele Electronics Technology Co., Ltd. Add: Area B, NO.2, Dahua 2st Street, Huadu District, Guangzhou, China.
Email: info@logoele.com TEL: +86 173 2831 6260 Web: www.logoele.com

1.4. Technical parameters

Working voltage	DC 24V±0.5V
Working current	<120mA
Output mode	ModBus RS485
Baud rate	9600
Measuring range	CO2: 0-5000ppm
	Temperature: -20~100℃
	Humidity: 0~100%RH
	Illuminance: 0~65535Lux
Accuracy	CO2: ± (50+5%FS) ppm
	Temperature: ±0.5℃
	Humidity: ±4.5%RH
	Illuminance: ±5%
Work environment	Temperature: -20~80℃
	Humidity: 0~100%RH(no condensation)
Storage environment	Temperature: -20~80℃
	Humidity: 0~100%RH(no condensation)

2. Product Installation

2.1. Electrical Diagram

1	Brown	VCC
2	blue	485-/B
3	black	GND
4	yellow	485+/A

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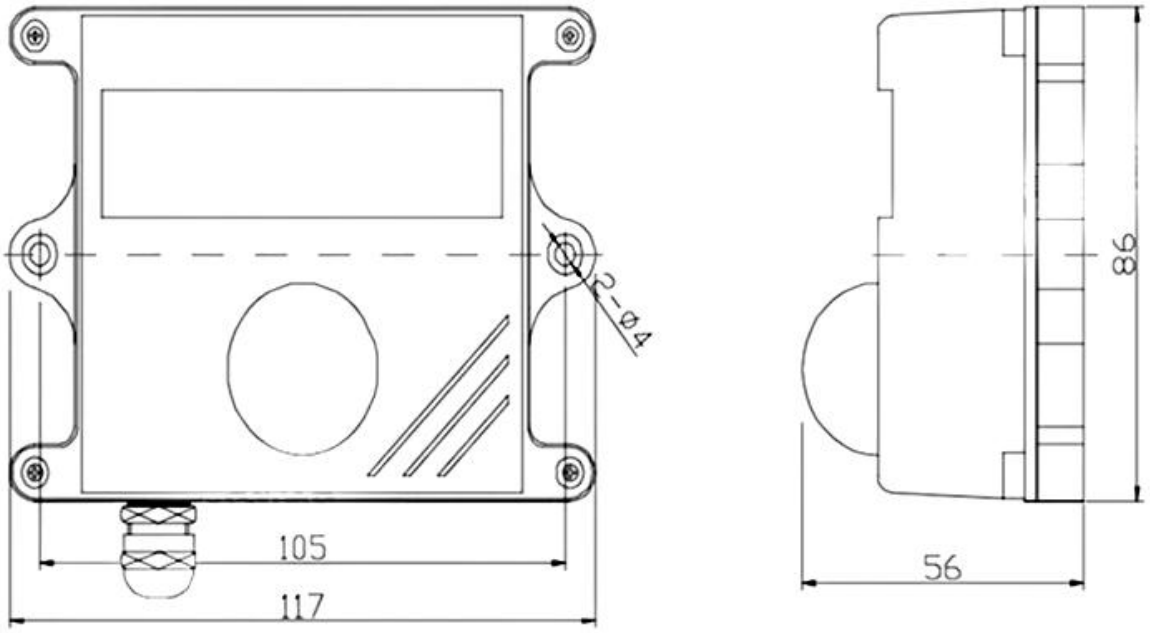
2.2 Mounting Diagrams



3. Communication Protocol

ModBus RTU protocol

Baud rate: 9600(default)
Data bits: 8
Stop position: 1
Check bit: N
Communication mode: 485 transmissions, RTU Modbus protocol, CRC calibration method (low in front).
Serial return data time: 300ms.
Reading speed is not more than 500ms.

1. Command to read address:

XX 00 xx xx 00 01 +Check(This feature cannot be read online)

XX	00	xx	xx	00	01	CRC check	
Address (any)	Function code	Start address of register (any)		Read data byte length		CRC_L	CRC_H

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Read address return :

XX 00 02 00 xx +Check (xx indicates to be determined)

XX	00	02	00	xx	CRC check	
Address (same as sending the first)	Function code	Data length	Retain	Address	CRC_L	CRC_H

2. Command to modify address:

(in advance through the above command to read the module's current address is xx)

xx 01 00 yy 00 00 +Check(This feature cannot be read online)

xx	01	00	yy	00	00	CRC check	
Current address	Function code	Retain	Modify address	Retain	Retain	CRC_L	CRC_H

Current address : Can read the order through the address to read this address

Function code : 01 indicates that the address is modified.

Modify address : Want to modify the address, range (2-255, No. 1 is reserved)

Address modification return : yy 01 02 00 yy +Check

yy	01	02	00	yy	CRC check	
Modify address	Function code	Data length	Retain	Modify address	CRC_L	CRC_H

Modified address : The above pre modification address, to determine the success of the address changes.

3. Command to read all data:

yy 03 00 00 00 04 +Check

yy	03	00	00	00	04	CRC_Check	
Address	Function code	Start address of register		Data length		CRC_L	CRC_H

Return data : yy 03 08 xx xx xx xx xx xx xx xx +Check

yy	03	08	xx	xx	xx	xx	xx	xx	xx	xx	CRC_Check	
Address	Function code	Data length	CO_2_H	CO_2_L	Tmp_H	Tmp_L	Humi_H	Humi_L	Lux_H	Lux_L	CRC_L	CRC_H

Note: CO_2 data=CO_2_H*256+CO_2_L unit : ppm

Tmp=temperature The highest bit of Tmp_H is 1,

Tmp_H&0x80=1 Express Negative temperature Tmp_H&0x80=0 Express Positive temperature

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Temperature data= (Positive temperature) (Tmp_H*256+Tmp_L) /100 unit : ℃

(Negative temperature) ((Tmp_H&0x7F)*256+Tmp_L)/100 unit : ℃

Humidity data=(Humi_H*256+Humi_L)/100 unit : %RH

Light illumination degree data=(Lux_H*256+Lux_L)*4 unit : lx

4. Command to read partial data:

yy 03 00 MM 00 NN +Check

yy	03	00	MM	00	NN	CRC_Check	
Address	Function code	Start address of register		Data length		CRC_L	CRC_H

Return data: yy 03 NN*2 xx xx ……xx xx +Check

yy	03	NN*2	xx xx ……xx xx	CRC_Check	
Address	Function code	Data length	sensor data	CRC_L	CRC_H

Note: xx xx ……xx xx is the sensor data,According to the register address and data length change.

00 MM is the Start address of register ,00 NN is the Data length.

Register address(00 MM)			
00 00	00 01	00 02	00 03
CO2	Temperature	Humidity	Light illumination degree

Data length NN minimum of 00 01. maximum of 00 04 (depending on the number of sensors). When the MM value is 00, The maximum data length nn can be 04, The value of all the sensors can be read at this time, Can also be 01, 01 can only read CO2 data. The address on the front of the register, When the data length is increased, Data can be read back sensor, But the address on the back of the register, Cannot read data from the previous address sensor.

See below for details :

00 MM 00 NN for 00 00 00 01 express from the start address 00 00 read CO2 data.

00 MM 00 NN for 00 00 00 02 express from the start address 00 00 read CO2 and Temperature data.

00 MM 00 NN for 00 00 00 03 express from the start address 00 00 read CO2 ,Temperature and Humidity data.

00 MM 00 NN for 00 00 00 04 express from the start address 00 00 read CO2 ,Temperature , Humidity and Light illumination degree data.

00 MM 00 NN for 00 01 00 01 express from the start address 00 01 read Temperature data.

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00 MM 00 NN for 00 01 00 02 express from the start address 00 01 read Temperature and Humidity data.

00 MM 00 NN for 00 01 00 03 express from the start address 00 01 read Temperature , Humidity and Light illumination degree data.

00 MM 00 NN for 00 02 00 01 express from the start address 00 02 read Humidity data.

00 MM 00 NN for 00 02 00 02 express from the start address 00 02 read Humidity and Light illumination degree data.

00 MM 00 NN for 00 03 00 01 express from the start address 00 03 read Light illumination degree data.

4.Notes

1. The power supply voltage cannot exceed the specified voltage, and the reverse connection of the power supply is prohibited during wiring, and live operation is prohibited.
2. The temperature measurement range is the sensor measurement range, and the actual measurement range should be the temperature range in the working environment. In order to avoid damage to the casing under high-temperature conditions.
3. When using, the light detection sensor lens should be kept clean.
4. When you do not know the address of the transmitter, you cannot connect to the 485 networks to read, you can only read the address first in the stand-alone state, and then connect to the 485 networks after modifying the address.

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