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KLHA KM75B96 integrated temperature humidity light sensor User Manual

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KLHA

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INTRODUCTION

KM75B96 using the standard RS485 bus MODBUS-RTU protocol, easy access to PLC DCS and other instruments or systems for monitoring carbon dioxide, temperature, humidity, and illuminance state quantities.The internal use of high-precision sensing core and related devices to ensure high reliability and excellent long-term stability, can be customized RS232, RS485, CAN,4-20mA, DC0~5V\10V, ZIGBEE, Lora, WIFI, GPRS and other output methods.

Technical Parameters

Technical parameter	Parameter value

CO2 range	0~5000ppm
CO2 accuracy	±100ppm
Temperature measuring range	-30℃~80℃
Temperature measuring accuracy	±0.5℃ @25℃
Humidity measuring range	0~100%RH
Humidity accuracy	±3%RH @25℃
Illuminance measuring range	0~65535Lux
Illuminance allow deviation	±7%
Repeatability test	±5%
Illuminance detection chip	Import digital
Wavelength range	380nm~730nm
Communication Interface	RS485
Default baud rate	9600 8 n 1
Power	DC6~24V 1A
Running temperature	-40~80°C
Working humidity	5%RH~90%RH

Product Size

73mm

105mm

62mm

ø8.5mm

105mm

wiring?

STAINLESS STEEL STRAINER

There is a filter around the waist
Convenient air circulation
for measurement

RED AND GREEN LIGHTS

Red is the power light
Green is the signal light

TOP PHOTOSENSITIVE COVER

Such as optional illumination configuration
There will be a photosensitive cover embedded on the top

SENSOR VENT

There are vents on the edge of the sensor
Prevent the interior from being too high and overheating
Cause large measurement deviation

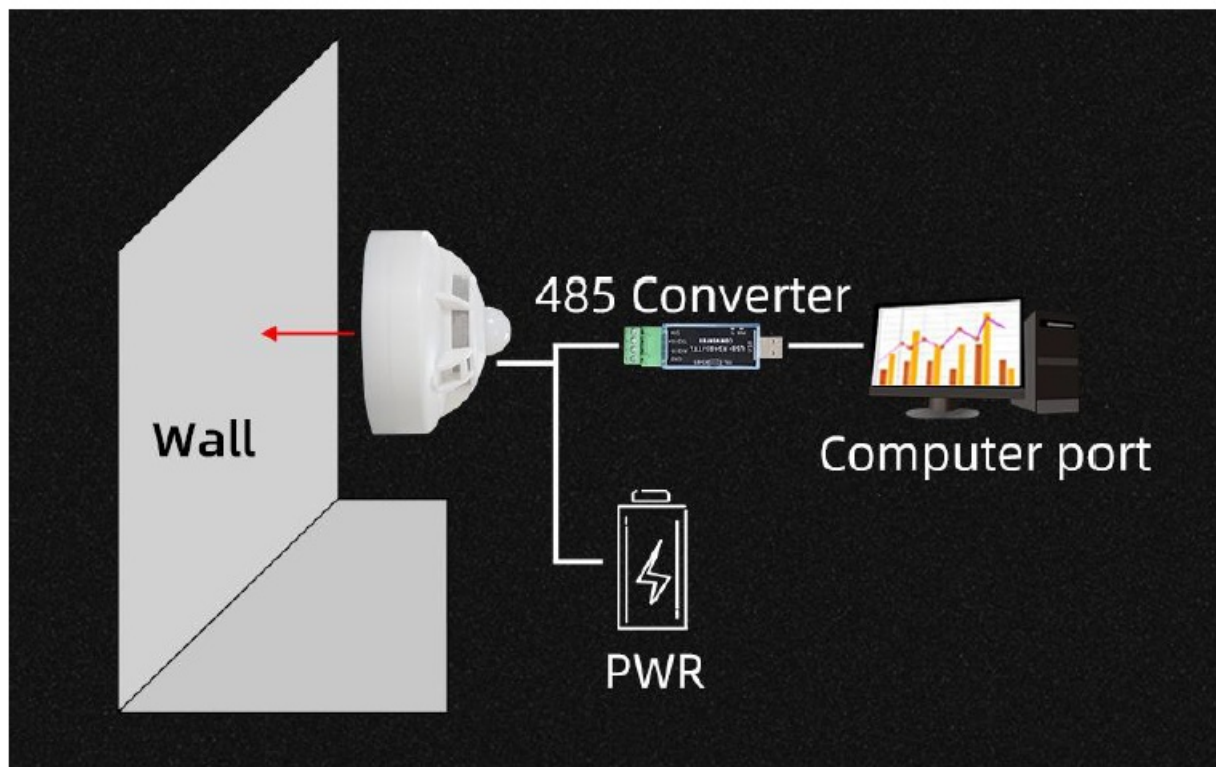## RS485 Wiring

B-/V	RS485 B-
GND	PWR-
VIN	PWR+
A+/I	RS485 A+

※Note: When wiring, connect the positive and negative poles of the power supply first, and then connect the signal wire

Application solution

How to use?

Communication Protocol

The product uses RS485 MODBUS RTU standard protocol format, all operation or reply commands are hexadecimal data. The default device address is 1 when the device is shipped, the default baud rate is 9600, 8, n, 1

Read Data (Function id 0x03)

Device ID	Function id	Start Address	Data Length	CRC16
01	03	00 00	00 03	05 CB

For the correct query frame, the devi ce will respond with data:01 03 06 00 7B 00 00 00 00 C5 7F , the response format is parsed as follows:

Device ID	Function id	Data Length	1	2	3	Check Code
01	03	06	00 79	00 7A	00 7B	C5 7F

Data Address Table

Address	Start Address	Description	Data type	Value range
40001	00 00	1# PM2.5register	Read only	0~65535
40002	00 01	2# PM2.5register	Read only	0~65535
40003	00 02	3# PM2.5register	Read only	0~65535
40101	00 64	model code	read/write	0~65535
40102	00 65	total points	read/write	1~20
40103	00 66	Device ID	read/write	1~249

Address	Start Address	Description	Data type	Value range
40104	00 67	baud rate	read/write	0~6
40105	00 68	mode	read/write	1~4
40106	00 69	protocol	read/write	1~10

Read and modify device address

Device ID	Function id	Start Address	Data Length	CRC16
FA	03	00 64	00 02	90 5F

Read or query device address
If you don't know the c urent device address and there is only one device on the bus, you can use the command
FA 03 00 64 00 02 90 5F Query device address.

FA is 250 for the general address. When you don't know the address, you can use 250 to get the real device
address, 00 64 is the device model register. For the correct query command, the device will respond, for example
the response data is: 01 03 02 07 12 3A 79, the format of which is as shown in the following table:

Device ID	Function id	Start Address	Model Code	CRC16
01	03	02	55 3C 00 01	3A 79

Change device address
For example, if the current device address is 1, we want to change to 02, the command is:01 06 00 66 00 02 E8 14

.

Device ID	Function id	Start Address	Destination	CRC16
01	06	00 66	00 02	E8 14

Read and Modify Baud Rate

Read baud rate

The device default factory baud rate is 9600. If you need to change it, you can change it according to the following table and the corresponding communication protocol . For example, read the current device's baud rate ID, the command is:01 03 00 67 00 01 35 D5 , its format is parsed as follows. Read the baud rate encoding of the current devic e. Baud rate encoding: 1 is 2400; 2 is 4800; 3 is 9600; 4 is 19200; 5 is 38400; 6 is 115200.

For the correct query command, the device will respond, for example the response data is: 01 03 02 00 03 F8 45, the format of which is as shown in the followin g table:

Device ID	Function id	Start Address	Data Length	CRC16
01	03	00 67	00 01	35 D5

Change the baud rate

For example, changing the baud rate from 9600 to 38400 , ie changing the code from 3 to 5, the command is: 01 06 00 67 00 05 F8 1601 03 00 66 00 01 64 15 .

Device ID	Function id	Data Length	Rate ID	CRC16
01	03	02	00 03	F8 45

Read Correction Value

Read Correction Value

When there is an error between the data and the reference standard, we can reduce the display error by adjusting the correction value. The correction difference can be modified to be plus or minus 1000, t hat is, the value range is 0 1000 or 64535 65535. For example, when the display value is too small, we can correct it by adding 100. The command is: 01 03 00 6B 00 01 F5 D6 . In the command 100 is hex 0x64 If you need to reduce, you can set a negative val ue, such as 100, corresponding to the hexadecimal value of FF 9C, which is calculated as 100 65535=65435, and then converted to hexadecimal to 0x FF 9C. The correction value starts from 00 6B. We take the first parameter as an example. The correction valu e is read and modified in the same way for multiple parameters.

Device ID	Function id	Start Address	Data Length	CRC16
01	03	00 6B	00 01	F5 D6

For the correct query command, the device will respond, for example the response data is: 01 03 02 00 64 B9 AF, the format of which is as shown in the following table:

Device ID	Function id	Data Length	Data value	CRC16
01	03	02	00 64	B9 AF

Change correction value

Fo r example, the current state quantity is too small, we want to add 1 to its true value, and the current value plus 100 correction operation command is:01 06 00 6B 00 64 F9 FD .

Device ID	Function id	Start Address	Destination	CRC16
01	06	00 6B	00 64	F9 FD

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Documents / Resources

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KM75B96 integrated temperature humidity light sensor, integrated temperature humidity light sensor, humidity light sensor, light sensor, RS485

References

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