Chengdu Ebyte Electronic Technology Co.,Ltd

Wireless Modem

User Manual

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1 Product Overview

1.1Product Introduction

This series of temperature and humidity transmitters is equipped with high-precision sensors, has a compact size, and is especially suitable for installation environments with limited space. The product features an RS485 communication interface and uses the standard ModBus-RTU protocol, allowing users to conveniently set the Modbus address and baud rate to adapt to different system requirements. It supports DIN35 rail mounting, making it easy to quickly integrate into industrial automation environments. Due to its reliability and flexibility, this series of products is widely applicable for temperature and humidity monitoring and control applications in various industrial settings.

1.2Features

- An optional version with an imported high-precision digital temperature and humidity sensor (SHT30) is available;
- 5~36V DC wide voltage input with reverse polarity protection;
- Supports RS485 interface communication;
- Supports standard Modbus RTU protocol;
- Wide temperature measurement range: -40°C to +125°C;
- Wide humidity measurement range: 0% to 100%;
- Supports Modbus address settings from 1 to 255;
- Supports configuration of 8 baud rates;
- Equipped with pluggable terminals, making installation and maintenance simple and convenient;
- Supports installation with positioning holes and rail mounting;
- Widely used for signal acquisition and control of equipment in industrial sites.

1.3Product Model List

Product Model	**Built-in sensor model**
EID041-G01	AHT20
EID041-G01S	SHT30

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2 Technical Specifications

2.1 Specifications and Parameters

Category	Name	parameters
Power Supply	Operating Voltage	DC 5 ~ 36V
	Power Indicator	Green LED Indicator light
communication	Communication Interface	RS485
	Baud Rate	4800-115200(8 Selectable Baud Rates)
	Communication Protocol	Standard Modbus RTU Protocol
MODBUS	Device Address	1~255
Temperature	Acquisition Channels	1channel
	Temperature Acquisition Accuracy	EID041-G01：±0.3℃ EID041-G01S：±0.2℃
	Temperature Resolution	0.1℃
	Acquisition Range	-40℃~+125℃;
Humidity	Acquisition Channels	1Channel
	Humidity Acquisition Accuracy	EID041-G01：±2%RH EID041-G01S：±2%RH
	Humidity Resolution	0.1%RH
	Acquisition Range	0~100%
Power Consumption	Maximum Power Consumption	0.1w
other	Product Size	82mm * 45mm * 28.5mm (Length*Width*Height)
	Operating Temperature	-40 ~ +85℃
	Installation Method	Mounting With Positioning Holes and Rail Mounting

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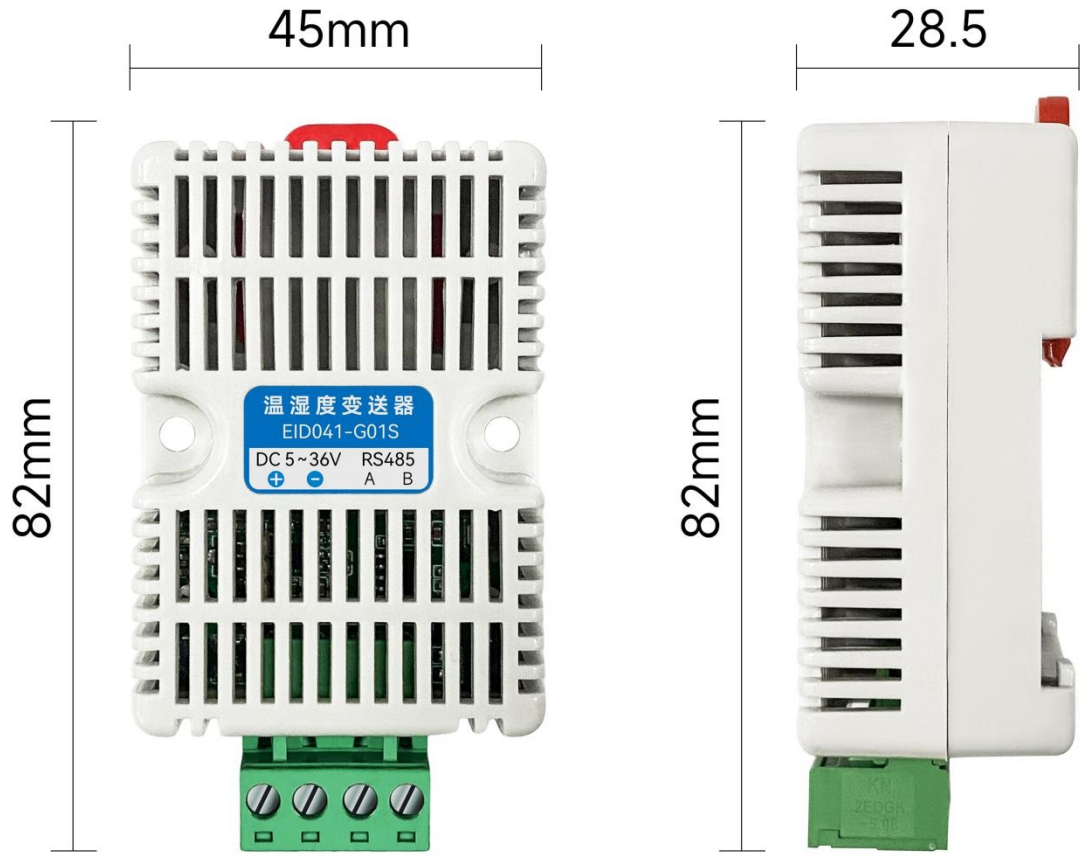
2.2 Default Device Parameters

Category	Name	Parameters
Basic Parameters	Modbus Address	1
	Baud Rate	9600bps
	Parity bit	None
	Data Bits	8
	Stop Bits	1

2.3 Dimensional Drawing



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2.4 Ports and LED Indicators

2.4.1 Description of Ports and LED Indicators

LED Indicator Description	
Name	Description
Power Indicator	Green LED indicator; on: Normal; off: Abnormal

Port Description	
Name	Description
Positive Power Terminal	Direct Current （5 ~ 36V）Positive Power Terminal Interface
Negative Power Terminal	Direct Current（5 ~ 36V）Negative Power Terminal Interface
RS485 A Interface	RS485 A Interface
RS485 B Interface	RS485 B Interface

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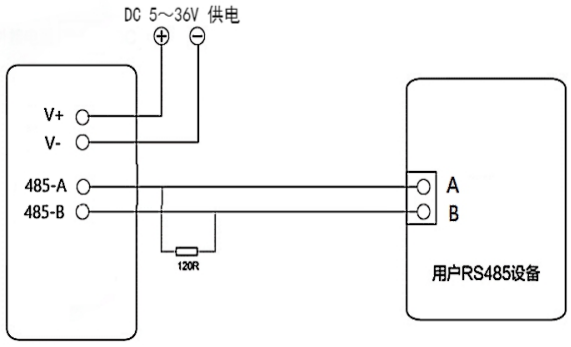
3 Quick Start Guide

3.1 Device Wiring

3.1.1 Power and RS485 Wiring



Note: When transmitting high-frequency signals over a 485 bus, the signal wavelength is relatively short compared to the transmission line, causing the signal to form a reflection at the end of the transmission line, which interferes with the original signal. Therefore, a termination resistor is required at the end of the transmission line to prevent signal reflection. The termination resistor should match the impedance of the communication cable, with a typical value of 120 ohms. Its function is to match the bus impedance, enhancing the anti-interference capability and reliability of data communication.

3.2 Quick Start

3.2.1 Device Preparation

In order to conduct connection tests, we need to prepare the following equipment:

Name	Quantity
USB to RS485 Module	1
EID041-G01S	1
Power Adapter 12V 1A	2

3.2.2 Device Connection

Connect the A and B interfaces of the device's RS485 port to the A and B interfaces of the USB to RS485 module, and power on the device (refer to the wiring section of the device for wiring details).

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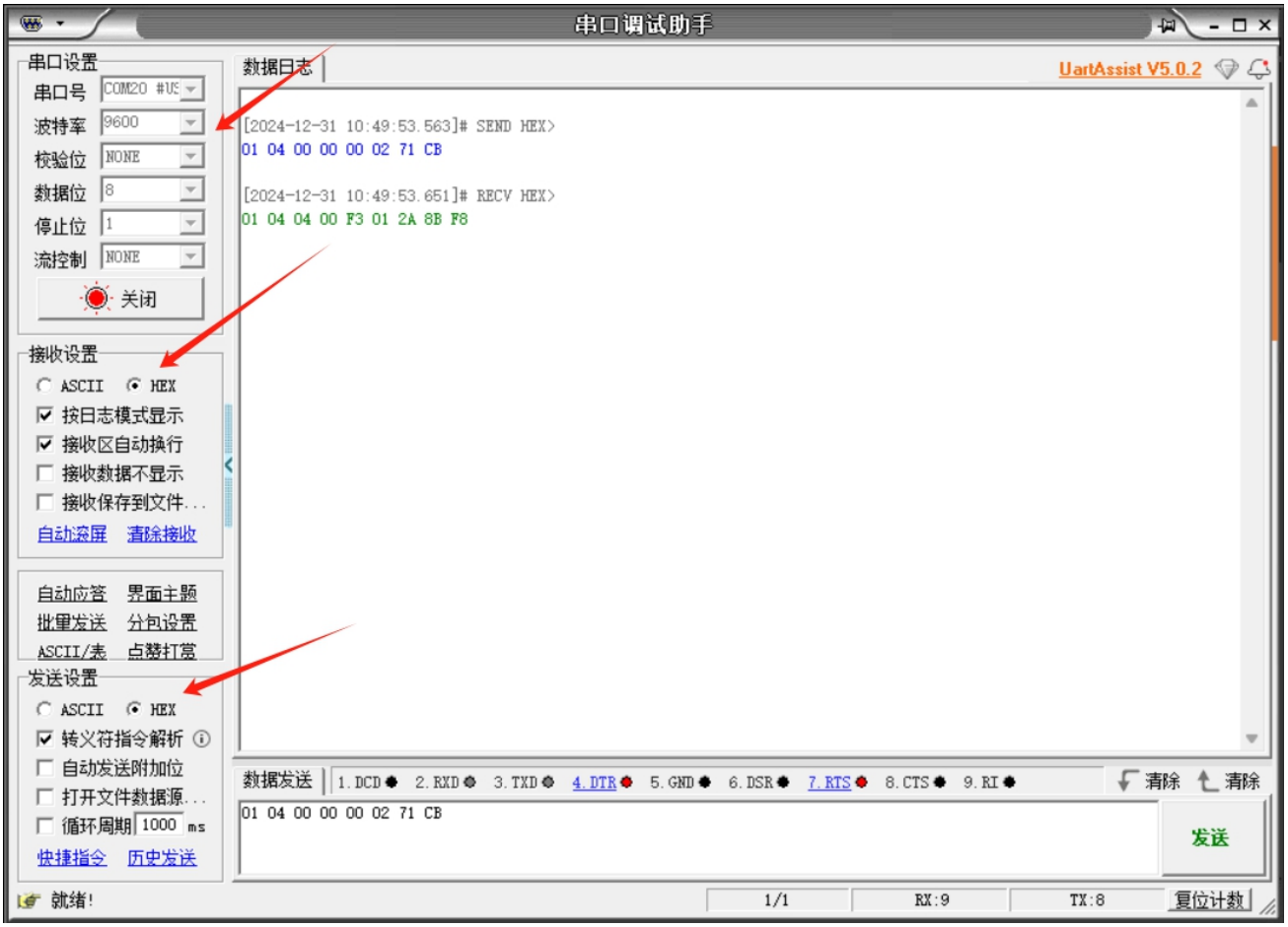
3.2.3 Acquisition Test

Open the serial port connection for EID041-G01S, select the corresponding baud rate parameter, choose hexadecimal transmission, and disable automatic line breaks, as shown in the figure.



Serial Port Configuration Diagram

Send a message to EID041-G01S via the serial port assistant :

01 04 00 00 00 02 71 CB （Simultaneously collect temperature and humidity from the first channel.）

EID041-G01S replies to the serial port assistant with a message :

01 04 04 00 F3 01 2A 8B F8

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4 Register Function Definition

4.1 Input Register Function Definition List

Register Address (Hexadecimal)	Register Address (Decimal)	Register Area	Function Code	Function Description
0x0000	3-0001	Area 3	R：0x04	Temperature Value Unit: °C (1) Positive Temperature: Register value is 260, actual temperature value: 260 x 0.1 = 26°C (2)Negative Temperature: Uploaded in two's complement form, actual temperature value: 0xFF9B (hexadecimal) = -101 → -10.1°C
0x0001	3-0002	Area 3	R：0x04	Humidity Value: Unit: %RH Calculation Method: Fixed 1 decimal place Example: Register value is 300, actual humidity value: 300 x 0.1 = 30 (%RH)
0x0002	3-0003	Area 3	R：0x04	Temperature Value Unit: °C Data Type: 32-bit floating-point number, big-endian mode
0x0003	3-0004	Area 3	R：0x04	
0x0004	3-0005	Area 3	R：0x04	Humidity Value Unit: %RH Data Type: 32-bit floating-point number, big-endian mode
0x0005	3-0006	Area 3	R：0x04	

4.2 Hold Register Function Definition List

Register Address (Hexadecimal)	Register Address (Decimal)	Register Area	Function Code	Function Description
0x0000	4-0001	4 区	R：0x03	Temperature Value Unit: °C (1)Positive Temperature: Register value is 260, actual temperature value: 260 x 0.1 = 26°C (2)Negative Temperature: Uploaded in two's complement form, actual temperature value: 0xFF9B (hexadecimal) = -101 → -10.1°C
0x0001	4-0002	4 区	R：0x03	Humidity Value: Unit: %RH Calculation Method: Fixed 1 decimal place Example: Register value is 300, actual humidity value: 300 x 0.1 = 30 (%RH)
0x0002	4-0003	4 区	R：0x03	Temperature Value Unit: °C

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0x0003	4-0004	4 区		Data Type: 32-bit floating-point number, big-endian mode
0x0004	4-0005	4 区	R：0x03	Humidity Value Unit: %RH Data Type: 32-bit floating-point number, big-endian mode
0x0005	4-0006	4 区		
0x000A	4-0011	4 区	R：0x03 W：0x06 W：0x10	RS485 Bus Modbus Address/Station Number Setting Range: 1 to 255 (default is 1 upon factory shipment) Note: The change will take effect after restarting.
0x000B	4-0012	4 区	R：0x03 W：0x06 W：0x10	Baud Rate Setting : 0:4800 1:9600(Default on delivery) 2:14400 3:19200 4:38400 5:56000 6:57600 7:115200 Note: The change will take effect after restarting.
0x003D	4-0062	4 区	R：0x03 W：0x06 W：0x10	Parity Setting: 0:No Parity (Default on Delivery) 1:Odd Parity 2:Even Parity Note: The change will take effect after restarting.

4.3 Data Acquisition Command Example

Collect temperature from the first channel.

Slave Address	Function Code	Starting Register Address		Number of Registers	CRC Checksum	
01	04	00	00	01	31	CA

Collect humidity from the first channel.

Slave Address	Function Code	Starting Register Address		Number of Registers	CRC Checksum	
01	04	00	01	01	60	0A

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Revision History

Version	Revision Date	Revision Description	Maintainer
1.0	2024-12-31	Initial Version	LT

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