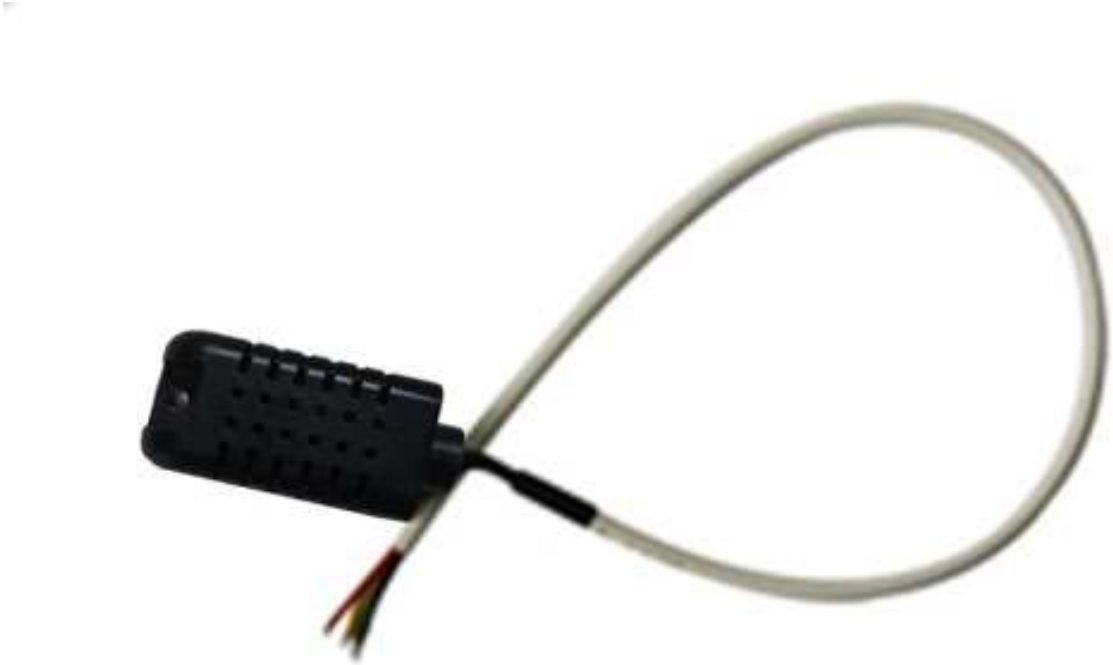
User Manual

(Version 1.0)

ESR-TH-485A

Low cost temperature and humidity transducer with RS485 interface



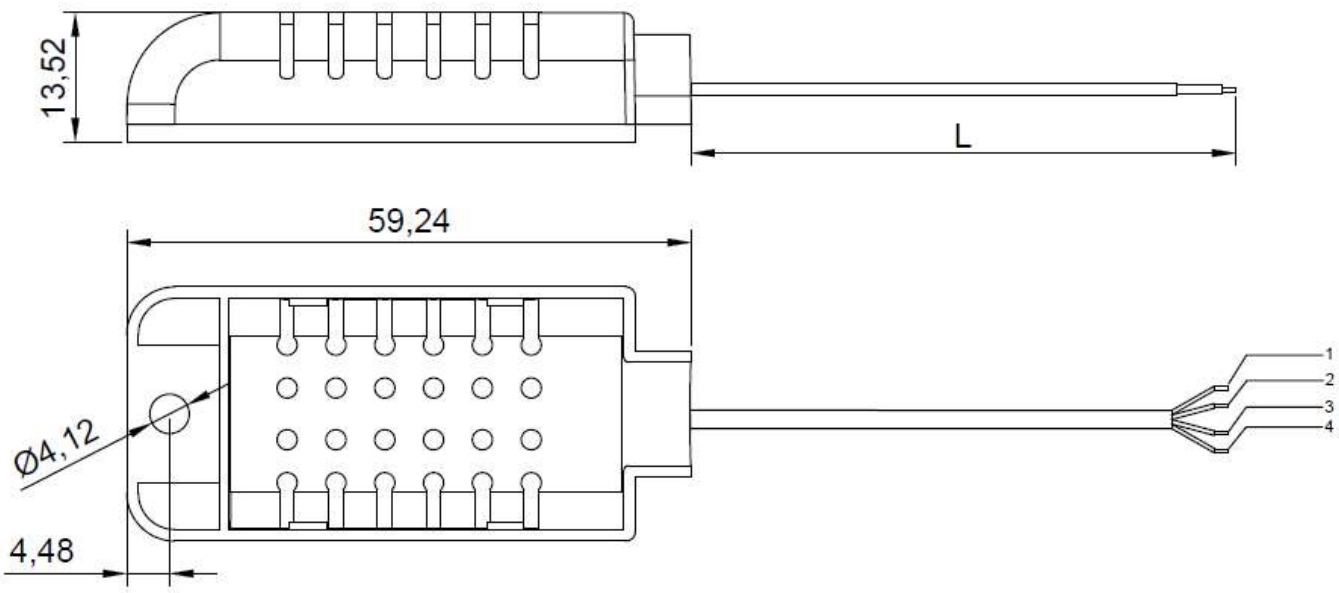
Introduction

This product uses the industrial standard RS485 bus and Modbus RTU protocol, which is convenient for access to various instruments or systems such as PLC, DCS, etc., and is used to monitor state quantities such as temperature and humidity. High-precision sensor cores are used internally to ensure that the product has high reliability and excellent long-term stability.

Technical specifications

Parameters	specifications
Temperature detect range	-30℃~80℃
Temperature measurement precision	±0.5℃ @25℃
Humidity measurement precision	±3RH @25℃
Interface	RS485
Protocol	Modbus RTU
Default communication settings	9600 8 n 1
Power supply	DC12~24V 0.2A
Operating temperature	-40~80°C
Operating humidity	5%RH~90%RH
Cable	UL2547-24AWG, shiled cable length 3M

Dimensions



Cable definition

1-RED	Power supply 12/24Vdc
2-Yellow	RS485-A+
3-Black	GND
4-White	RS485-B-

*L means cable length

Parameters list

PLC address	Registers address	description	direction	Range	unit	Effective
40001	00 00	temperature	R	0~65535	℃*0.01	
40002	00 01	humidity	R	0~65535	RH*0.01	
40003	00 02	Sensor state	R	0~65535		
40004	00 03	Sensor fault	R	0~1	1= fault	
40101	00 64					
40102	00 65					
40103	00 66	Device address	R/W	1~249		immediately
40104	00 67	Baud rate	R/W	1=1200, 2=2400, 3=4800, 4=9600, 5=14400, 6=19200, 7=38400， 8=57600		reset
40105	00 68	parity	R/W	0=none, 1=odd, 2=even		reset
40106	00 69	Stop bit	R/W	1=1bit, 2=2bits		reset
40107	00 6A	command： MCU reset	R	0X5AA5		immediately
		command： restore default	R	0X5BB5		reset