Brief Description of HE200/HE400 Series RS485/Modbus Transmitter

(Version: 1.1)

HUATO Electronic Co., Ltd

1. Introduction:

HE400 series and HE200 series are temperature, relative humidity transmitters, adopt import components and high-performance low-power SCM design, which assure the quality and stability. HE400 series and HE200 series support two kinds of output: RS485 or Standard MODBUS protocol. They have unique design features to ensure no circuit interface of themselves. They are wall-mounted and enjoy widely measuring range and high accuracy, suitable for DC16V-30V. HE400 series has LCD display, HE200 series has no LCD display. Besides, both of them have internal and external probe. Customers can have many choices according to their demands.

2. Applications：

HE400 series and HE200 series are designed for temperature and humidity control in conditioning and ventilation application in the following sectors: pharmacy, museums, clean rooms, ventilation ducts, industrial and civil sectors, crowded places, canteens, auditoria, gyms, high-density farms, greenhouse, etc.

3. Model list:

Model	**HE200M**	**HE200M-EX**	**HE200N**	**HE200N-EX**
	HE400M	**HE400M-EX**	**HE400N**	**HE400N-EX**
Temperature accuracy	±0.5℃	±0.5℃	±0.5℃	±0.5℃
Humidity accuracy	±3%RH	±3%RH	±3%RH	±3%RH
Probe type	Internal	External	Internal	External
Measuring range	0～50℃	-30～70℃	0～50℃	-30～70℃
Output	**Modbus**	**Modbus**	**RS485**	**RS485**
Wire mode	4 lead terminals			
Measuring range	0～100％RH			

4. Port settings:

Baud rate	9600 bps
Data bits	8
Parity	None
Stop bits	1

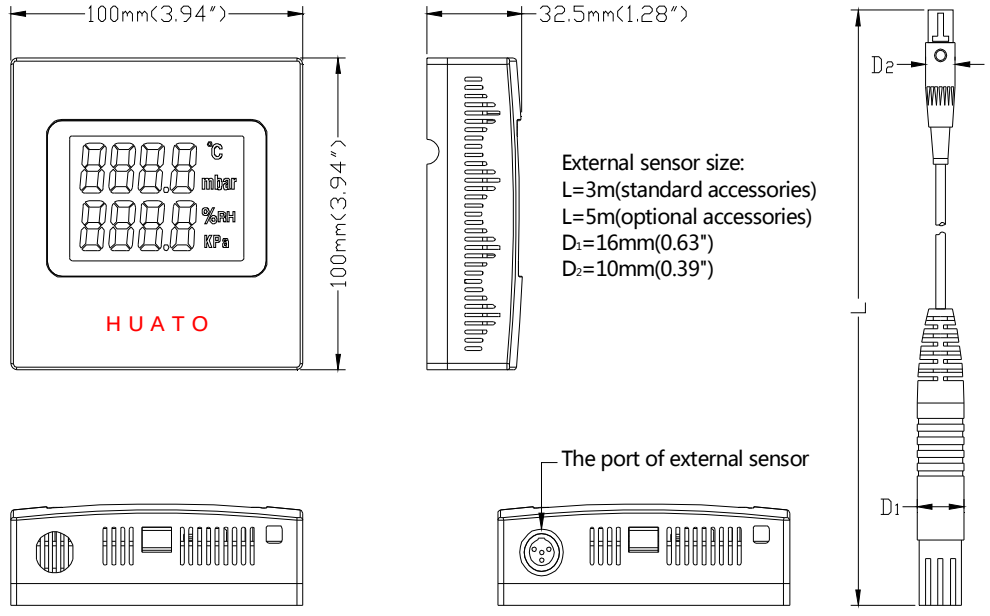
5. Technical specifications：

	Temperature	Humidity
Measuring range	0℃～50℃（internal） -30℃～70℃（external）	0%RH～100%RH
temperature accuracy	±0.5℃	≤±3%RH(25℃,20-90%RH)
Working range	-10℃～60℃	0%RH～100%RH（non-condensing）
Power supply	DC 9～30V （suggest 12V）	
Output	RS485/Modbus	
Canning material	ABS Engineering Plastics	
Wire mode	4 lead terminals	

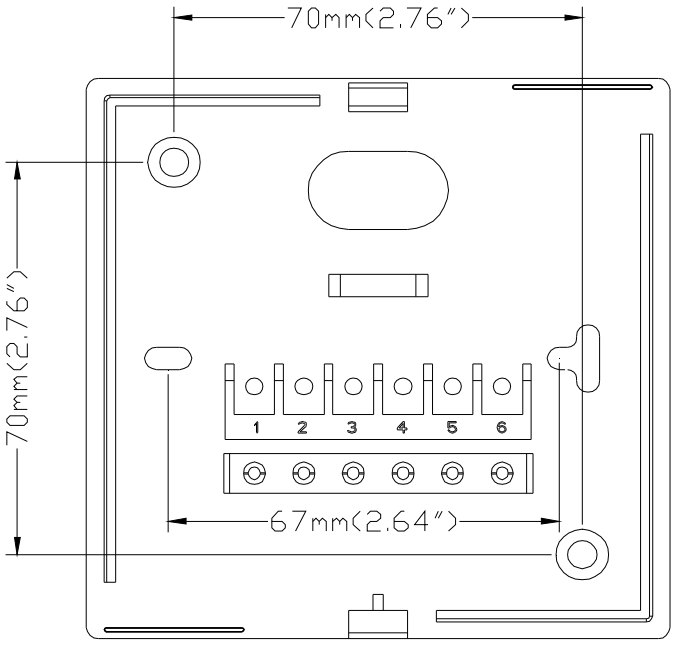
6. Order of connection for voltage：

1	2	3	4	5	6
B	**A**	**Gnd**	**VCC**	**--**	**--**
485-	**485+**	**Negative wire**	**Positive wire**	**--**	**--**

7. Mechanical drawings:

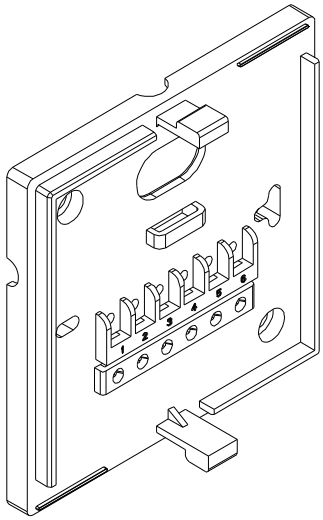


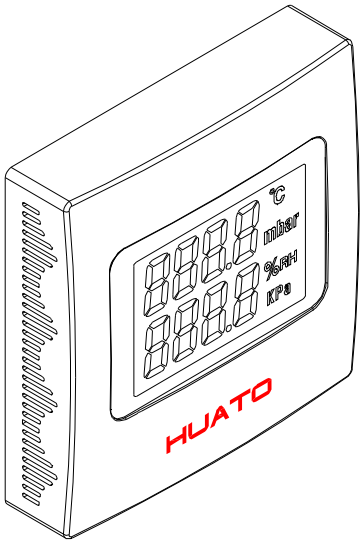
8. Installation dimension：



9. Installation instructions：

Fist fix the drain pan onto the right installation position，then buckle the watch case upon the installed drain pain.





10. MODBUS RTU Mode

Address	Function	Data	CRC
1 byte	1 byte	N bytes	2 bytes

11. MODBUS RTU Format

Function Code	Field Name	Length（Bytes)	Example (Hex)
06 Set slave address	Slave Address	1	0x01
	Function	1	0x06
	Target Address High	1	0x00
	Target Address Low	1	0x00
	New Address	1	（0x01-0xF7）
	CRC (low byte)	1	
	CRC (high byte)	1	
06 Response of setting slave address	Slave Address	1	
	Function	1	0x06
	Data	1	0x01(Suc) / 0x00(Fail)
		1	0x00
		1	0x00
		1	0x00
		1	0x00
	CRC (low byte)	1	
	CRC (high byte)	1	
03 Read Temperature and Humidity	Slave Address	1	0x08
	Function	1	0x03
	Starting Address High	1	0x00
	Starting Address Low	1	0x00
	Number of Points High	1	0x00
	Number of Points Low	1	0x02
	CRC (low byte)	1	0xC4
	CRC (high byte)	1	0x92
03 Response of reading	Slave Address	1	0x08
	Function	1	0x03
	Bytes Count	1	0x04
	Temp High	1	0x01
	Temp Low	1	0x15
	Humi High	1	0x02
	Humi Low	1	0xFA
	CRC (low byte)	1	0xF2
	CRC (high byte)	1	0x28

10. Quality assurance：

Instrument warranty for 1 year, our factory is responsible for non-man-made damage during maintenance period.

11. Notes：

1. Please avoid direct sunlight and any situation which may influence the accuracy of temperature and humidity surrounding the installation position.
2. Please shut off the power supply before installation and replacement. Besides, please check the connection to assure whether it is right before power up.
3. Some functional parameters of product maybe amended, the correct functional parameter is subject to the label.