HG808

Temperature and Humidity Transmitter User Manual

V1.1

HENGKO Technology Co., Ltd

About Us

HENGKO Technology Co., Ltd. is a specialized and innovative national high-tech enterprise that integrates the research and development, manufacturing, sales, and service of temperature and humidity dew point transmitters.

For over 20 years of deep cultivation in the industry, HENGKO has taken the mission of "solving the filtration, perception, and analysis problems in the gas and liquid world, making life healthier", continuously improving product performance and quality, filling the functional gap in the field of environmental measurement, solving technical problems in temperature, humidity, and dew point measurement, and helping customers continuously improve product competitiveness.

HENGKO has a team of engineers with strong independent innovation capabilities and rich industry customization experience, as well as a systematic, rigorous, and efficient product design and production system. From technical services to product development, from basic measurement to high-end applications, we provide customers with comprehensive temperature and humidity measurement solutions.

HENGKO's products are widely used in industries such as automotive manufacturing, rail transit, aviation, high-speed rail, biopharmaceuticals, gases, compressed air, electronic devices, smart agriculture, warehouses, logistics, and food processing.

Catalogue

1. Product Introduction

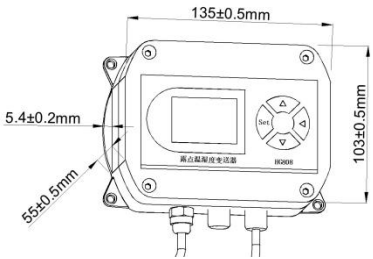
1.1. Product Overview

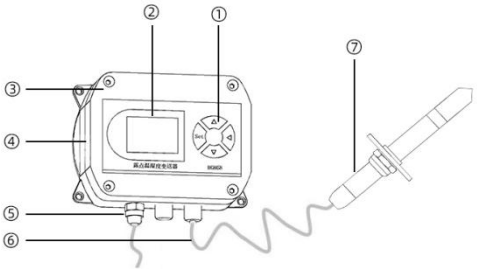
HG808 is an industrial grade temperature and humidity dew point transmitter developed and designed specifically for harsh environments. The characteristics of high precision, high resolution, fast response, and strong reliability, as well as excellent repeatability, durability, long-term stability, and strong sensor pollution resistance, making it more advantageous in harsh environmental measurements such as high temperature and high pressure, low temperature and low humidity, dangerous and explosive, and severe pollution.

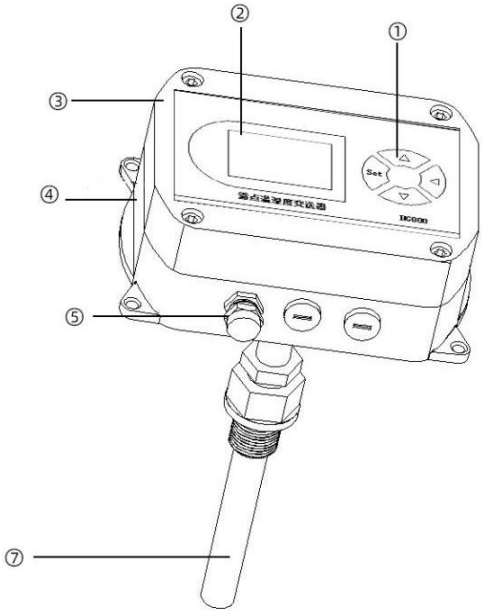
This product adopts explosion-proof design and supports dot matrix LCD data display with waterproof shell. The product supports the standard Modbus RTU protocol and can synchronously output temperature, humidity, and dew point measurement data. It can be interconnected with PLC, human-machine screen, DCS, and various configuration software; Simultaneously supporting the selection of 4~20mA/0-5V/0-10V three analog signal outputs (one out of three), it can be flexibly connected to on-site digital display meters, PLC, frequency converters, industrial control hosts and other equipment.

This product can be widely used not only in clean rooms, pharmaceutical factories, hydrogen production stations, hydrogen supply stations, hydrogen cooled generator sets, air compressors, pressure pipelines, vacuum equipment, HVAC, swimming pools, museums, archives, nitrogen manufacturing plants and other places, but also in harsh environmental fields such as metallurgy, chemical fiber, petrochemical, electronic manufacturing, SF6 switch gas micro water in substations, and synthetic ammonia industry.

1.2. Product Overview







1=Keys

2=LCD display screen

3=Aluminum alloy upper cover

4=Aluminum alloy lower cover

5=Sensor power cable

6=Sensor probe input cable

7=Sensor probe (stainless steel)

1.3. Function Features

- Can accurately and stably measure: temperature and humidity in ultra-high temperature environments (optional), dew point temperature in high temperature environments (optional), temperature and humidity in high humidity environments (optional), dew point temperature in low dew point environments (optional).
- Split/pipeline type probes with strong anti pollution and oil resistance capabilities.
- Simultaneously supporting RS485 output and two analog outputs.
- Analog output with 15 high-resolution bits, digital output with optional resolution of 0.1 or 0.01.
- Supports single register and multi register reading.
- Some models of products have anti condensation function, which can keep sensors synchronized in high humidity environments.
- Digital output can read dew point, humidity, and temperature simultaneously.

■ Using the standard Modbus RTU protocol, it is easy to achieve interconnection with PLC, DCS, and various configuration software.

■ 10V~30V ultra wide voltage input, overcurrent protection, power polarity protection, industrial grade ESD safety protection, and power supply anti reverse connection function.

2. U Series - Ultra high temperature and high humidity transmitter High temperature dew point transmitter

2.1. Technical Parameter

Range and Accuracy	
Temperature range	-40 ~ 190°C
Dew point range	-60 ~ 80°C （Within the range, it can be set as needed）
Humidity range	0 ~ 100%RH （recommend: <95%RH ）
T accuracy	±0.1°C（@20°C）
H accuracy	±2%RH（@20°C，10~90%RH）
Dew point accuracy	±2°C (± 3.6 °F) Td
Input and Output	
Power supply	DC 10V ~ 30V
Power consumption	<0.5W
Analog Outputs	Humidity+Temperature, Dew Point+Temperature (choose one)
	4-20mA/0-5V/0-10V (choose one from three)

RS485 Digital Output	Temperature, humidity, dew point (read simultaneously)
	resolution ratio： 0.01°C / 0.1°C (optional) 0.01%RH / 0.1%RH (optional)
Baud rate	1200, 2400, 4800, 9600, 19200, 115200 can be set, The default is 9600 PBS
Acquisition frequency	The fastest response is 1 second, other settings can be set according to PLC
Byte format	8 data bits, 1 stop bit, no check
Pressurization	16 bar
Working temperature (Transmitter body)	- 20℃ ~ +60℃, 0%RH ~ 95%RH (Non condensation)

2.2. Application Scenarios

The HG808 U series dew point temperature and humidity transmitter has long-term stable high-precision humidity sensing ability and excellent corrosion resistance. It is equipped with a sturdy cast aluminum shell and stainless steel sensor components, suitable for continuous and accurate detection of temperature and humidity in extremely harsh industrial environments (<190 ℃).

■ The U-series ultra-high temperature and humidity transmitter is equipped with a humidity sensor that can withstand ultra-high temperatures and measure temperature and humidity in working environments below 190 ℃. Therefore, it is more suitable for precise measurement of temperature and humidity in various ultra-high temperature environments such as high-temperature process engineering, industrial high-temperature drying, combustion flue gas emissions, chimney emissions, and high-temperature constant temperature and humidity test chambers.

■ The U-series high humidity transmitter has excellent measurement performance under high humidity conditions. Its high precision, durability, reliability, and robustness make it widely used in many aspects of the food processing industry, such as temperature and humidity monitoring and

control during baking, ripening, drying, and storage of foods such as tea, corn, beans, meat, fruits and vegetables.

■ The sensor equipped with the U-series ultra-high temperature and humidity transmitter has extremely strong corrosion resistance and is not affected by most chemical gases such as oil vapor, dust, and microparticles. This series is not only suitable for temperature and humidity monitoring in ultra-high temperature (<190 ℃) working conditions, but also for extremely harsh conditions, such as exhaust emissions from the petrochemical industry Temperature and humidity measurement of gases such as recycled gases in catalytic reforming units of refineries that are prone to corrosive damage to equipment. Therefore, this series of products is usually used in working environments such as high-temperature drying, equipment, process and factory automation, cleanrooms, pharmaceutical industry, chemical industry, refining plant equipment, etc.

The HG808-U series dew point temperature and humidity transmitter has multiple types of probes to choose from, please refer to Article 5 "Probe Types" for details.

2.3. Product Selection

Ultra High temperature High humidity	**HG808-U**				
Probe Type	Split 1	Split 2	Split 3	Pipeline 1	Pipeline 2
	1	**2**	**3**	**4**	**5**
Display Function	With display			Without display	
	Y			**N**	
Analog signal output(+485)	4~20mA		0-5V		0-10V
	4		**5**		**1**

HG808-U □ □ □

- **Analog signal output**
- **Display function**
- **Probe type**

Example:

HG808-U3Y4 stand for the analog output is 4-20mA, with display , split probe transmitter, and type 3 probe is selected.

3. W Series - High-temperature temperature and humidity transmitter low-temperature temperature and humidity transmitter

3.1. Technical Parameter

Range and Accuracy	
Temperature range	-50 ~ 150°C
Dew point range	-60 ~ 80°C （Within the range, it can be set as needed）
Humidity range	0 ~ 100%RH （recommend: <95%RH ）
T accuracy	±0.1°C （@20°C）
H accuracy	±1.5%RH （@20°C，10~90%RH）
Dew point accuracy	±2°C (± 3.6 °F) Td
Input and Output	
Power supply	DC 10V ~ 30V
Power consumption	<0.5W
Analog Outputs	Humidity+Temperature, Dew Point+Temperature (choose one)
	4-20mA/0-5V/0-10V (choose one from three)

RS485 Digital Output	Temperature, humidity, dew point (read simultaneously)
	resolution ratio: 0.01°C / 0.1°C (optional) 0.01%RH / 0.1%RH (optional)
Baud rate	1200, 2400, 4800, 9600, 19200, 115200 can be set, The default is 9600 PBS
Acquisition frequency	The fastest response is 1 second, other settings can be set according to PLC
Byte format	8 data bits, 1 stop bit, no check
Pressurization	16 bar
Working temperature (Transmitter body)	- 20°C ~ +60°C, 0%RH ~ 95%RH (Non condensation)

3.2. Application Scenarios

The HG808 W series temperature and humidity transmitter is equipped with a ± 1.5% RH high-precision, long-term stability, and durable humidity sensor probe, which is extremely suitable for measuring humidity and temperature in harsh industrial environments ranging from -50 ℃ to 150 ℃.

■ The HG808 W series temperature and humidity transmitter can meet the requirements of dust-free and clean temperature and humidity measurement, providing users with better dust-free protection and control. It is an ideal choice for measuring clean room environments and is widely used in electronic clean rooms, pharmaceutical clean rooms, hospital operating rooms and other scenarios.

■ The typical applications of the HG808 W series temperature and humidity transmitter also include humidity and temperature measurements that require strict temperature and humidity control in the pharmaceutical industry, chemical industry, factory automation systems, electrical control systems, agricultural engineering, animal husbandry, food industry, meteorological stations, office and public building HVAC systems, textile processing, constant temperature and humidity test chambers,

incubators, ship containers, and other industries.

The W series temperature and humidity transmitter has multiple types of probes to choose from, please refer to Article 5 "Probe Types" for details.

3.3. Product Selection

High Precision	HG808-W				
Probe Type	Split 1	Split 2	Split 3	Pipeline 1	Pipeline 2
	1	**2**	**3**	**4**	**5**
Display Function	With display			Without display	
	Y			**N**	
Analog signal output(+485)	4~20mA		0-5V		0-10V
	4		**5**		**1**

HG808-W □ □ □

- **Analog signal output**
- **Display function**
- **Probe type**

Example:

HG808-W4N5 represents the analog output of 0-5V, without display,pipeline type probe transmitter. Type 4 probe is selected.

4. S Series - Low humidity low dew point transmitter

4.1. Technical Parameter

Range and Accuracy	
Temperature range	-40 ~ 150°C
Dew point range	-80 ~ 80°C （Within the range, it can be set as needed）
Humidity range	0 ~ 100%RH （recommend: <95%RH ）
T accuracy	±0.1°C （@20°C）
H accuracy	±1.5%RH （@20°C，10~90%RH）
Dew point accuracy	±2°C (± 3.6 °F) Td
Input and Output	
Power supply	DC 10V ~ 30V
Power consumption	<0.5W
Analog Outputs	Humidity+Temperature, Dew Point+Temperature (choose one)
	4-20mA/0-5V/0-10V (choose one from three)

RS485 Digital Output	Temperature, humidity, dew point (read simultaneously)
	resolution ratio: 0.01°C / 0.1°C (optional) 0.01%RH / 0.1%RH (optional)
Baud rate	1200, 2400, 4800, 9600, 19200, 115200 can be set, The default is 9600 PBS
Acquisition frequency	The fastest response is 1 second, other settings can be set according to PLC
Byte format	8 data bits, 1 stop bit, no check
Pressurization	16 bar
Working temperature (Transmitter body)	- 20°C ~ +60°C, 0%RH ~ 95%RH (Non condensation)

4.2. Application Scenarios

The HG808 S series dew point transmitter is a reliable and durable dew point meter designed for measuring low dew point conditions. It is a commonly used dew point measuring instrument for air compression dryers, freeze-type dryers, membrane dryers, and adsorption dryers.

■ The S series dew point transmitter can be installed on the front devices of industrial applications, such as pipeline drying using vacuum and dry gas purification technology, hot regeneration compressed gas and adsorption drying, and for penetrating flammable or non flammable materials Reliable online measurement of the actual moisture content of any gas in all applications, such as inert or corrosive gases, to detect residual humidity/dew point behind the plastic industry's material drying machines.

■ The S series dew point transmitter provides a solution for energy management and quality assurance in applications such as the lithium battery industry.

■ The S-series dew point transmitter is usually used for humidity detection in air separation nitrogen production, air, dry gas, compressed gas, natural gas, liquefied gas, high-temperature sintering furnace protective gas, electronic industry protective gas, insulation gas, refrigerant, as well as rapid analysis of trace moisture in food industry, pharmaceutical industry, mechanical manufacturing, and various mixed gases. It is also widely used in meteorological analysis, power switches, metal smelting, petrochemical processes, natural gas processing, electronic manufacturing, textiles, medicine, food, aerospace and other fields.

The S series temperature and humidity transmitter has multiple types of probes to choose from, please refer to Article 5 "Probe Types" for details.

4.3. Product Selection

Low dew point Low humidity	HG808-S		
Probe Type	Split 1	Split 2	Split 3
	1	**2**	**3**
Display Function	With display	Without display	
	Y	**N**	
Analog signal output	4~20mA	0-5V	0-10V
	4	**5**	**1**

HG808-S □ □ □

- **Analog signal output**
- **Display function**
- **Probe type**

Example:

HG808-S2Y5 represents the analog output of 0-5V, with display , split type probe transmitter, using type 2 probes.

5. Probe

5.1. Probe Type

The probes of the HG808 transmitter are equipped with stainless steel sintered filters from HENGKO. The conventional probe structure is shown in the table below (customizable according to customer needs):

	Probe Description	Picture
Split type probe 1	Commonly selected probes can be used in various workplaces. The sturdy and compact probe structure is particularly suitable for narrow spaces, winding pipelines, and smaller pipelines	 Pipe length: 80mm
Split type probe 2	Low dew point measurement in industrial applications. Typical applications include compressed air drying and metal processing. Hexagonal threads are available in two models: M20 * 1.5 / M27 * 2	 Pipe length: 170mm+40mm

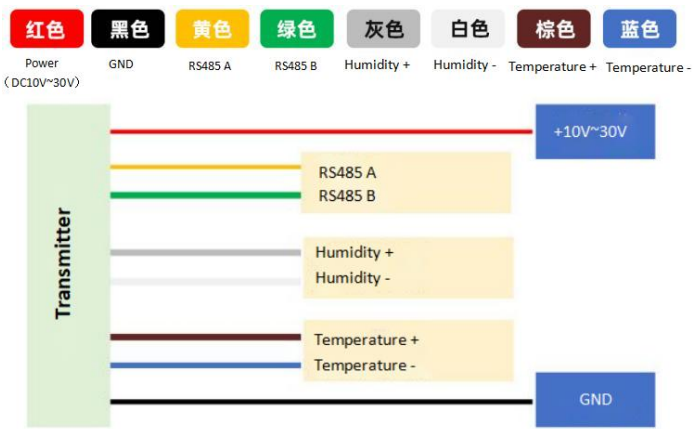
Split type probe 3	Used for a wide pressure range, it is an ideal choice for temperature and humidity measurement processes in pressurized or vacuum environments. Hexagonal threads are available in two models: M20 * 1.5 / M27 * 2	 Pipe length: 215mm+40mm
Pipeline probe 4	High precision, stability, and reliable operation probe, suitable for pipeline installation and used to monitor the relative humidity and temperature of building energy management systems.	 Pipe length: 260mm
Pipeline probe 5	Featuring dust and corrosion resistance, it can be used for temperature and humidity measurement and monitoring in various industrial fields. Suitable for high-temperature pipeline facilities such as large-sized pipelines and smoke pipes, as well as machine equipment working conditions. Hexagonal threads are available in two models: M20 * 1.5 / M27 * 2	 Pipe length: 460mm

5.2. Probe installation

Flange Stainless steel probe	G1/2" Hexagonal threaded Stainless steel probe	M20 * 1.5 Hexagonal threaded Stainless steel probe	M27 * 2 Hexagonal threaded Stainless steel probe
			
			
			

5.3. Wiring

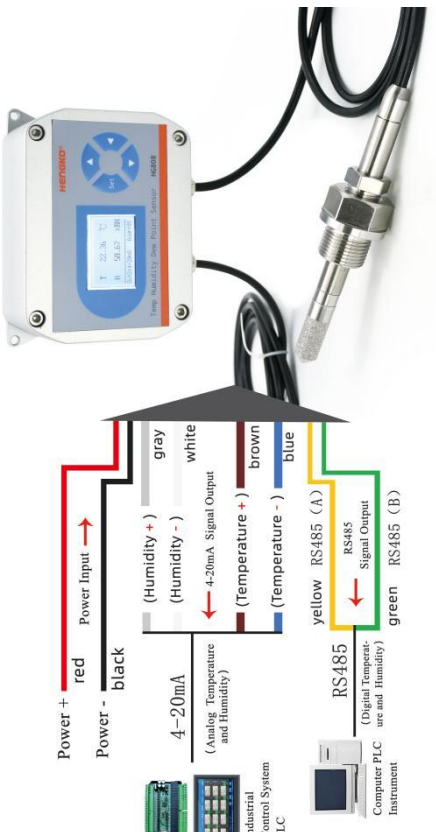
The transmitter output adopts an 8-core cable, and the functions of each color wire core are defined as follows:



Please check the transmitter wiring to prevent damage to the transmitter due to incorrect wiring! Please wire transmitters with different analog output types according to the diagram below.

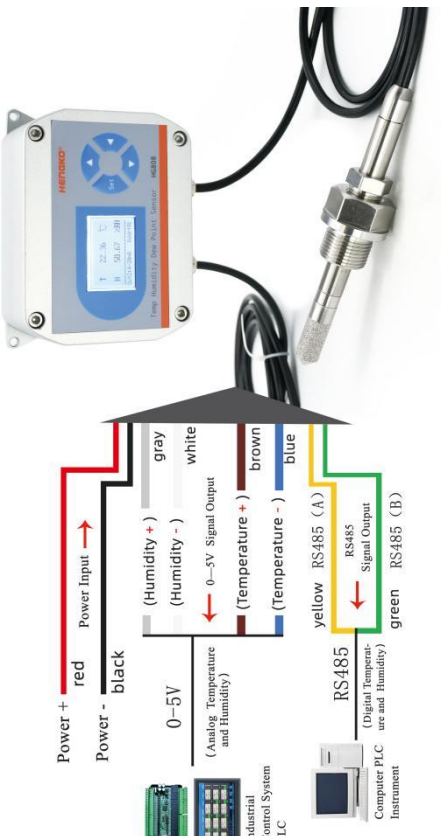
4-20mA Current Type Wiring Diagram :

Please double-check the sensor wiring before powering on to prevent damage to the sensor due to the wrong wire!



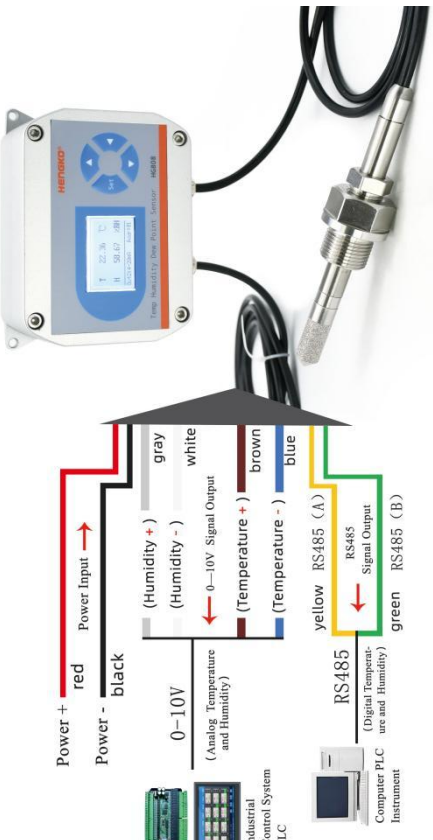
0-5V Voltage Type Wiring Diagram :

Please double-check the sensor wiring before powering on to prevent damage to the sensor due to the wrong wire!



0-10V voltage type wiring diagram :

Please double-check the sensor wiring before powering on to prevent damage to the sensor due to the wrong wire!

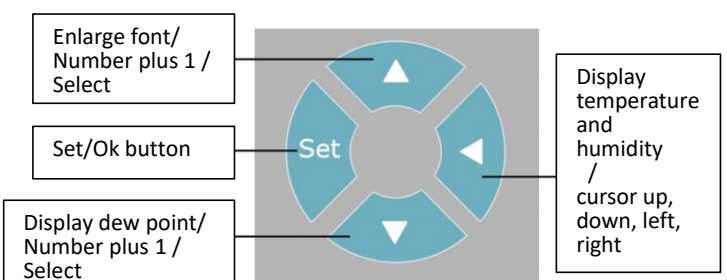


6. Instrument operation

The meter runs automatically after powering on, and when it starts, the model number of the table HG-808 will be displayed, as shown in the following figure:

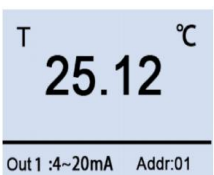
<Button function>

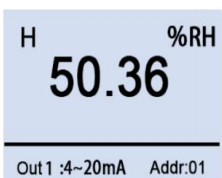
HG-808 has 4 buttons, and the functions of each button are defined as follows:

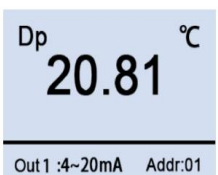


<Real-time monitoring>

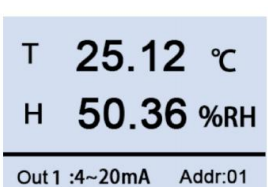
Press the button on the panel to enter the single data display mode. Temperature, humidity and dew point are displayed alternately every second, and the data is automatically refreshed.



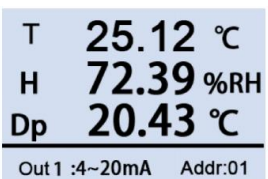




The default display mode for startup is shown below. In other display modes, press the button on the panel to switch to this display mode at any time.



Press the button  on the panel to switch to the simultaneous display mode of temperature, humidity, and dew point, as shown in the following figure

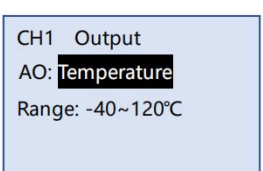


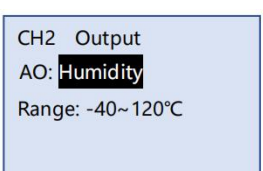
<Parameter settings>

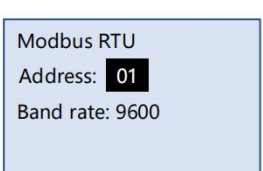
Press the button 

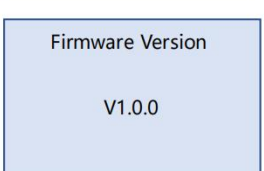
to display the interface that requires entering a password, as shown in the following figure:

After entering the password of “100”, press the Set button again to enter the following settings interface in sequence:









7. Analog output calculation

4-20mA current type output signal conversion calculation:

For example:

The range is -40~+80°C, 4~20mA output, when the output signal is 12mA, the current temperature value is calculated.

The span of this temperature range is 120°C, which is expressed by a 16mA current signal, 120 °C/16mA = 7.5°C/mA, that is, the current 1mA represents a temperature change of 7.5°C.

Measured value: 12mA-4mA=8mA,

8mA*7.5°C/mA=60°C

60 + (-40) = 20°C

The current temperature is 20°C

0-5V voltage type output signal conversion calculation:

For example:

The range is -40~+80°C, 0-5V output, when the output signal is 3V, the current temperature value is calculated.

The span of this temperature range is 120°C, which is expressed by a 5V voltage signal, 120°C/5V=24 °C/V, that is, the voltage 1V represents the temperature change of 24°C.

Measured value: 3V-0V=3V

3V*24°C/V=72°C

72 + (-40) = 32°C

The current temperature is 32°C

The above calculations are generally used for debugging and analysis, and when the PLC/DCS system is actually connected, the conversion and digital display by the ADC are completed by the PLC or DCS system.

0-10V voltage type output signal conversion calculation:

For example:

Measuring range -40~+80°C, 0-10V output, when the output signal is 5V, calculate the current temperature value.

The span of this temperature range is 120°C, which is expressed by a 10V voltage signal, 120 °C/10V=12 °C/V, i.e. voltage 1V represents a temperature change of 12°C,

Measured value: 5V-0V=5V

5V*12°C/V=60°C

60+(-40)=20°C

The current temperature is 20°C

The above calculations are generally used for debugging and analysis, and when the PLC/DCS system is actually connected, the conversion and digital display by the ADC are completed by the PLC or DCS system.

8. Heat anti-condensation

➢To enable the heating and anti-condensation function, go to the HG602&808 Test Tools program and click the button on the heating function bar<ON>.

➢After 10 minutes of activating the heated anti-condensation function, the heated anti-condensation function will be automatically turned off.

➢If you need to turn off the heating and anti-condensation function immediately, please go to the HG602&808 Test Tools program, click the button in the heating function bar<OFF>, and turn off the heating and anti-condensation function.

9. Communication Protocols

Communication protocol: Modbus-RTU

Default communication mode: 9600pbs,n,8,1,

Address: The default value is 1

Downlink Packet Format (PLC → Instrument):

Address Code	Function	Start Address	Number of Registers	CRC-16
1byte	1byte	2byte (H,L) *	2byte (H,L)	2byte (L,H)

Uplink message format (instrument → PLC):

Address Code	Function	Data length*	Data *	CRC-16
1byte	1byte	1byte	1~N	2byte (L,H)

* "H" is a high byte , "L" is a low byte , used to indicate the byte order

* Data length: the number of bytes of all data,

data length = number of registers x 2

* Data: A single piece of data is generally composed of 2 bytes, with the high byte first and the low byte last.

The function codes used in this product are as follows：

Function Code (hexadecimal)	Function Description
03	Read input register
06	Write a single hold register

Register address：

Register type	Register Address	Implication	Bytes and data types
Input register	0X0000	Temperature value	Two bytes, signed integer, magnified 100 times
	0X0001	Humidity value	Two bytes, unsigned integer, magnified 100 times
	0X0003	Sensor status	Two bytes, unsigned integer,
	0X0004	Temperature value	Two bytes, signed integer, magnified 10 times
	0X0005	Humidity value	Two bytes, unsigned integer, magnified 10 times
	0X0007	Sensor status	Two bytes, unsigned integer,
Hold register	0X0100	Device address	Two bytes, unsigned integer,
	0X0101	baud rate	Two bytes, see "Baud Rate Settings"
	0X0109	Sensor heating switch	Two bytes

<03 Function code - Read full data with a resolution of 2 decimal places>

Host query frame format(Hexadecimal):

Add	Function	Start Address (high priority)	Number of registers (H,L)	Check Code CRC-16)
0X01	0X03	0X00，0X00	0X00，0X04	0X44，0X09

Transmitter response frame format（Hexadecimal）

Eg： Tem 26.27°C， Humidity 30.55%RH， Dew point 9.01°C

Add	Function	length	Data				check code (CRC-16)
			Tem	Humidity	Dew point	Status	Low byte(before) High byte(after)
0X01	0X03	0X08	0X0A 0X43	0X0B 0XEF	0X03 0X85	0X00, 0X00	0XD5,0X6A

The temperature and humidity calculation example is as follows:

Convert the hexadecimal into decimal and divide by 100 to get the corresponding temperature and humidity value.

Temperature: 0X0A43=2627/100=26.27°C

Humidity: 0X0BEF=3055/100=30.55%RH

Dew point temperature: 0X0385=901/100=9.01°C

When the temperature value is negative, the data is uploaded as a complement.

For example, if the temperature is =0XFF37, it is converted to decimal: -201, divided by 100, the temperature is -2.01°C

Status values: Analyzed by bit. bit0: indicates that the temperature sensor is faulty, bit1: indicates that the humidity sensor is faulty, and bit2 to bit15: indicates that the temperature sensor is retained.

<03 Function code - Read individual data>

Host query frame format (hexadecimal) :

Add	Function	Start Address (H,L)	Data Lenght (H,L)	Check Code (CRC-16)
0X01	0X03	Specified register address	0X00，0X01	CRC-16

Slave (transmitter/probe) answer frame format (hexadecimal) :

Add	Function	Data Length	Data（H,L）	CRC-16(L, H)
0X01	0X03	0X02	2 bytes	2 bytes

Example 1: Reading the temperature value (33.21°C)

Down (upper computer /PLC) :

01 03 00 00 00 01 84 0A

Up (Sensor/transmitter) :

01 03 02 0C F9 7D 06

Example 2: Reading the Dew Point Value (15.86°C)

Down (upper computer /PLC) :

01 03 00 02 00 01 25 CA

Up (Sensor/transmitter) :

01 03 02 06 32 3A 31

<03 Function code - Read transmitter address>

Host query frame format:

Function	Register address (High priority)	Date length (High priority)	check code (CRC-16)
0X03	0X01，0X00	0X00，0X01	0X84，0X27

Transmitter response frame format

Add	Function	length	Transmitter address		Check code (CRC-16)
			Address high	Address low	
0X00	0X03	0X02	0X00	0X01	0X44，0X44

<06 Function code - Set address >

Format of the frame sent by the host (for example, 0X08=8) :

Add	Function	Register address (H,L)	Date length (H,L)	CRC-16 (L,H)
0X00	0X06	0X01，0X00	0X00，0X08	0X88，0X21

The transmitter response frame is the same as the host sending frame:

Add	Function	Register address (H,L)	Date length (H,L)	CRC-16 (L,H)
0X00	0X06	0X01，0X00	0X00，0X08	0X88，0X21

Instructions:

* The mailing address ranges from 1 to 247

* When the transmitter address is queried, the address code of the downlink packet is fixed at 0X00. When setting the transmitter address, the address code can be its own real address, or it can be 00 (to prevent forgetting the transmitter address, you can reset through the 00 address)

* When using the 00 address code to reset the device address, ensure that there is only one transmitter on the bus.

<06 Function code - Set baud rate >

Host frame delivery format (for example, set the baud rate to 9600bps) :

Add	Function	Register address (H,L)	Date length (H,L)	CRC-16 (L,H)
0X00	0X06	0X01, 0X01	0X00, 0X04	0XD9, 0XE4

The transmitter response frame is the same as the host sending frame:

Add	Function	Register address (H,L)	Date length (H,L)	CRC-16 (L,H)
0X00	0X06	0X01, 0X01	0X00, 0X04	0XD9, 0XE4

Register value and baud rate comparison table:

Register value	Baud rate
=1	1200bps
=2	2400pbs
=3	4800pbs
=4	9600pbs
=5	19200bps
=6	115200bps

Note: The change of the baud rate generally takes effect immediately. Note that the upper computer software needs to be reconnected with the new baud rate. If the change does not take effect, power it on again.

<06 Function code - Enable/Disable anti-condensation Settings >

Open Settings: 00 06 01 09 00 01 98 25

Off setting: 00 06 01 09 00 00 59 E5

Note:

1) During opening, the temperature of the probe will rise, which will affect the accuracy of the dew point value.

2) In order to protect the sensor, it will automatically turn off 10 minutes after opening (it can be closed by command within 10 minutes).

10. Maintenance and Troubleshooting

<Sensor cleaning>

The main body of the transmitter can be wiped and cleaned with a lint free damp cloth.

Do not immerse the transmitter in liquids, and do not use cleaning agents or solutions.

<Calibration of transmitters>

HG808 has been fully calibrated at the factory. The recommended calibration interval is 1 year. If there is reason to believe that the equipment is not within the accuracy specifications, a high-precision handheld dew point meter with a calibration certificate that can be used for on-site inspection should be used (the calibration certificate is valid). If on-site inspection shows that HG808 is not within its accuracy specifications, contact the supplier or your local agent to calibrate the HG808 transmitter.

<Troubleshooting>

◆ **Fault:**

After RS485 connection, there is no communication message.

✧ **Possible causes and solutions:**

It may be a wiring error or communication parameter error. Please carefully check the wiring and address, baud rate, register address, and other settings. In addition, incorrect power supply can also cause the transmitter to malfunction.

◆ **Fault:**

RS485 communication message has serious frame loss.

✧ **Possible causes and solutions:**

Perhaps the cable is too long or the RS485 converter has very strict requirements for level matching or poor anti-interference ability. Please try adding a 120 ohm balance resistor or replacing it with a reliable RS485 converter.

◆ **Fault:**

There is a communication message, and the upper computer cannot display data.

✧ **Possible causes and solutions:**

Some PLCs or DCS can only parse sensor data with a resolution of 0.1. HG808 provides two types of data with resolutions of 0.01 and 0.1. Please read the corresponding register address

◆ **Fault:**

Analog output error is relatively large.

✧ **Possible causes and solutions:**

The accuracy of analog signals also depends on the sampling error at the receiving end. Please check the working status of the receiving equipment. If it is confirmed that the error is not caused by the cable/receiver, please contact the manufacturer or dealer.

11. Testing Software Download link:

Software download link:

www.hkometer.com/download/

www.hengko.cn/download/

12. Note

1. The product should be fully connected to the receiving end such as PLC or computer before connecting to the power supply; Do not connect the sensor or receiver after power is applied;

2. The transmitter casing should be grounded to eliminate interference (recommended);

3. Do not touch sensor components or blow air;

4. The working power supply voltage should be used within the range;

5. Install the probe facing downwards;

6. The usage environment should not contain polluting gases (acidic);

7. The wind speed and pressure of the environment must be within the range of use;

8. The transmitter and probe should be installed away from sparks, flames, and flammable materials;

9. Other prohibited items for the use of transmitters.

Safety and warnings

- Before using the product, please read the user manual carefully. When operating according to the procedures detailed in this manual, the product is safe. Do not apply this product to measuring situations greater than the maximum value stated in the manual.
- Do not disassemble or replace any cables or electrical components that come with this product, as it may damage the transmitter.
- Before turning on the power, please confirm that all external wiring is correct. Any incorrect wiring or short circuit may cause damage to the transmitter.
- The transmitter must be maintained by the manufacturer or an approved agent.
- Some models of products have anti condensation function, which can improve the performance of sensors in high humidity and frozen environments, as well as perform sensor chemical cleaning. The start stop function is

controlled by the user. To protect the sensor, it will automatically shut down after more than 10 minutes of activation.

Please read this user manual carefully before use.

The company reserves the right to interpret this user manual.

The appearance of this product is subject to the actual product.

Product technology or software upgrades are available without prior notice.

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