Product Specification

HT403

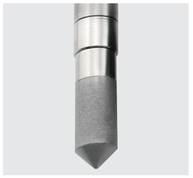
High Temperature and Humidity Transmiter

Brief Introduction

This high temp. temperature and humidity transmitter is specially degined for harsh industrial applications with the advantages of high precision, wide measuring range, excellent chemical polution protetction, stable performance and long service life.

Max temperature resistance: 200°C

The sensor of HT403 has the characteristic of high temperature resistance. It can work well under 200°C for a long time.



Specifications

Humidity range	0~100%RH
Temperature range	-40~200°C
Humidity accuracy	±2%RH
Temperature accuracy	±0.3°C
Response time	⩽15s
Output	4-20mA current signal with RS485 interface
Supply voltage	24V DC

Features

- 0~100%RH full range measuring.
- It can be calibrated in the field.
- Temperature, humidity, dew point, mixture ratio, absolute humidity and other 4-20mA output for choice.
- Precision measuring - with Switzerland original measuring chip, as excellent accuracy of measuring.
- Widely measuring range - the measuring range of temperature is -40~200°C.
- Chemical contamination resistance - excellent chemical contamination ability and can be worked steady in various complex chemical contamination for a long time.
- Digital inteface - with RS485 digital interface with real-time communication, accuraci calibration, multi monitor, etc.

On-line Calibration

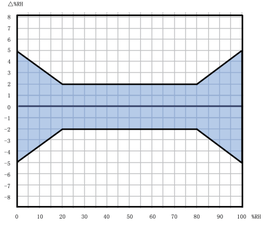
This product has been factory calibrated. It can be also calibrated via RS485 interface or software.

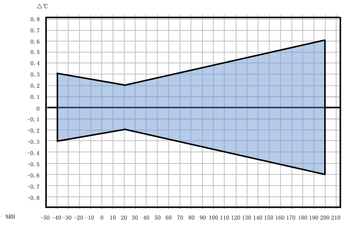
Applications

Industrial on-line measuring, petrochemical gas emission measuring, thermoelectric gas emission measuring, tobacco industry, drying baker, environmental test chamber, etc.

Technical Index

Humidity range	0-100%RH
Humidity acuracy@25°C	±2%RH (20% RH…80% RH)
Repeatability(Humidity)	±0.1%RH
Humidity(long-term steadty)	<0.5%RH
Response time-humidity (tau 63%)	15s





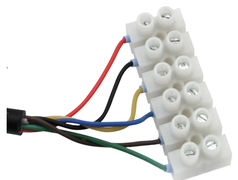
Tempearture range	-40°C~200°C
Accuracy(temperature)	±0.2°C @25°C
Repeatability(temperature)	±0.1°C
Long-term steady (temperature)	<0.04°C
Response time-temperature (tau 63%)	30s

Technical Index

Power supply/connect	HT403
Supply voltage	24V DC±10%
Current consumption	Max 80mA
Electrical connection	Terminal

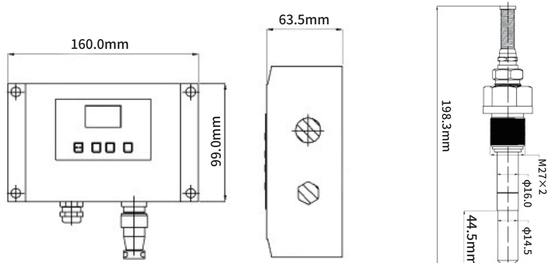
Output/Parameter	HT403
Parameter caculation	24V DC±10%
Housing material	Max 80mA
Digital interface	Terminal
Display method	Nixie tube
Displayer working temperature	-40~70°C
Cable length	Standard length is 2M，can be customized(Max 6M)

Terminal Definition



Red：Power
Black：GND
Yellow：RS485A
Blue：RS485B
Green：Humidity
Brown：Temperature

Product Diagram



RS485 Communication Method

There are Address identification sticker inside the transmitter, the communication serial port setting are as below (Cannot mo-dify):
Baud rate: 19200
Check bit: No
Date bit: 8
Stop bit: 1

Self-developed monitoring system (Eg:SComAssistant)

Frist, start the SComAssistant (Please download via ineternet)
The software will operate (without any error), as the Figure 1:

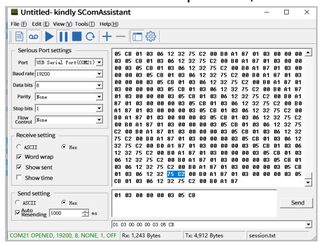


Figure 1.
Data communication acquisition software panel

After everything is displayed normally, data collection can be carried out on the module. You can use the software on the computer to send commands to the module to read the data.
The format of the command sent is as follows:
Add+0x03+0x00+0x00+0x03+crc0+crcl
Sending data illustrate:
First(01): Add (Setting according to the ID of transmitter, the usually setting is 01)
Second(02): Command
Third-fourth(00 00): Fixed format, fixed data(Cannot modify)
Fifth-sixth(00 03): Read data length(Cannot modify)
Seventh- Eighth(05 cb): CRC check bit

The Figure 2 is show you how to send command.
Configuration: 01+03+0x0+0x0+0x3+0x5+0xcb
When the address is 1, the send data is: **01030000000305cb**

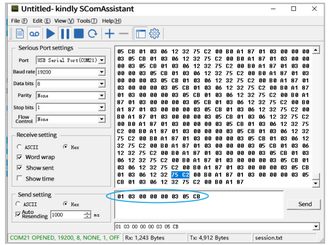


Figure 2 .
Send command via the software

After sending such data, the data collected from the module can be displayed, and the data reading and precautions are shown in Figure 3:

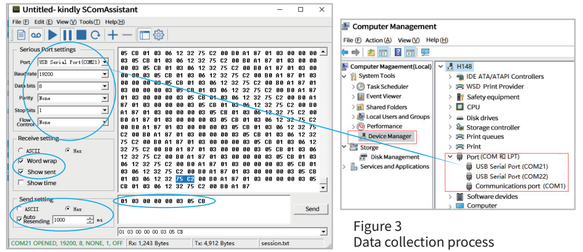


Figure 3
Data collection process

✶Note:

Figure 3 are some things that need to attention in the data collection process:
1. Software setting: The set of Serial port, Baud rate, Check bit, Date bit and Stop bit must same to the RS485 module.
2. Send data-"Hexadecimal sending", Data reception-"Hexadecimal display"
3. Send data is: 0x01+0x03+0x0+0x0+0x0+0x3+0x5+0xcb (Please confirm the data to be sent according to the example)
4. Send manually: The setting cycle is once. Auto send: Setting cycle is available (1000ms)
5. The receive data please check the figure 3:

Receiving data illustrate:

First (01): Add
Second-Third (0306): Command
Fourth-Fifth (1E5F): Humidity
Sixth- Seventh (7536): Temperature
Eighth-Ninth (7391): Dew point
Tenth –Eleventh (A858): CRC check bit

The formulas of temperature and humidity are as below:

Humidity: Hexadecimal (1E5F)→Decimal(7775) →Data /100(77.75). The humidity is 77.55%
Temperature: Hexadecimal (7536)→Decimal(30006) →Data-27315(2691) → Data/100(26.91). The humidity is 26.91°C
The temperature and humidity data collecting of RS485 has finished.

Online Base conversion

Support any conversion between 2-36，floating Point Numbers also available

Base 2 Base 4 Base 8 Base 10 Base 16 Base 32 Hexadecimal

Number 1E5F

Base 2 Base 4 Base 8 Base 10 Base 16 Base 32 Decimal

Result 7775

Develop software via standard 485

Baud rate: 19200 (default)、Check bit: No、Date bit: 8、Stop bit: 1.The command is 03 when you need to read the register. And you only need to read these three registers: 40001(humidity).40002(temperature) and 40003(dew point).
E.g:
Humidity: Hexadecimal (1E5F)→Decimal(7775) →Data /100(77.75). The humidity is 77.55%
Temperature/dew point: Hexadecimal (7536)→Decimal(30006) →Data-27315 (2691) →Data/100(26.91) The humidity/dew point is 26.91°C.

Note: To ensure the normal data reading, please do no set the number of registers more than 3