

# MTH500HS High Temperature and humidity sensor



## Overview

MTH500HS is a Duct type super high temperature and gas corrosion-proof temperature and humidity transmitter, adopting the Switzerland advanced sensor and latest integrated measurement technology, through the high-performance single chip designed for temperature humidity measurement for **high temperature or corrosion environment in Building automation, HVAC, Greenhouse, Pharmaceutical and Chemical industries etc.**

## Feature

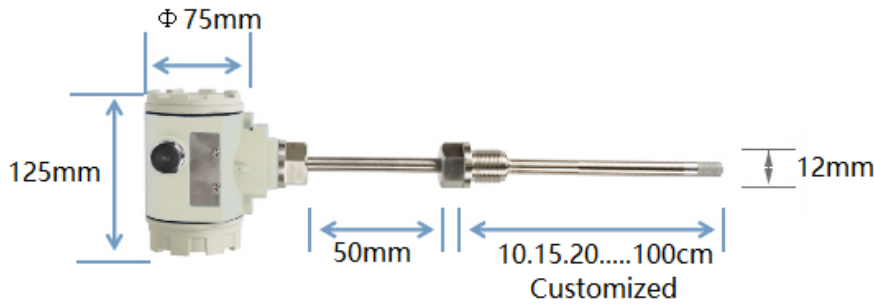
- High Accuracy, High Stability; High sealing technology
- **With LCD display, optional**
- **Probe: 316SS Stainless Steel material, PTFE corrosion-proof**
- **Measure range: T: -40 to 200°C, H: 0-100%,**  
LCD display: temperature range can be set flexibly directly  
Offset function for further accuracy adjustment (LCD display)
- **Output: 4-20mA, RS485 Modbus**
- Accuracy: T:  $\pm 0.3^{\circ}\text{C}$ , H:  $\pm 3\%$ ; Resolution: T: 0.1, H: 0.1%RH
- Long-term stability: T:  $< 0.04/\text{year}$ , H:  $< 0.5\% \text{RH}/\text{year}$
- Stem length, thread size can be customized as requirement
- Wide power supply: 15-30VDC, 24VAC( $\pm 20\%$ )



## Specification

<b>Accuracy</b>	T: $\pm 0.3^{\circ}\text{C}$ (Full range in average);	<b>Head Material</b>	aluminum alloy
	RH: 3%RH	<b>Display</b>	LCD, temperature and humidity
<b>Long Stability</b>	T: $< 0.04^{\circ}\text{C}/\text{year}$ ;	<b>Probe Type</b>	316LSS Stainless steel, PTFE corrosion-proof
	RH: $< 0.5\% \text{RH}/\text{year}$	<b>Installation</b>	Duct Type
<b>Measured Range</b>	T: -40 to 200°C; RH: 0-99.9%	<b>Head Case Size</b>	125mmx77mm
<b>T output range</b>	T: -40 to 200°C, can be set (with lcd display)	<b>Probe Size</b>	D: 12mm, Extended Length: 50mm (fixed) Insert Length: 10, 15, 20, 30.....100mm
<b>Resolution</b>	T: 0.1°C, RH: 0.1%RH	<b>Entry connector</b>	M20X1.5mm
<b>Load resistor</b>	$\leq 500\text{ohm}$ (4-20mA)	<b>Thread size</b>	M27X2, 1/2" G, fixed, customized
<b>Output</b>	4-20ma, RS485 Modbus output	<b>Protection</b>	Electrical Case: IP65; Sensor: IP54
<b>Power Supply</b>	15-30VDC, 24VDC; 24VAC( $\pm 20\%$ )	<b>Working Ambient</b>	T: -40 to 200°C (Probe), -20 to 80°C (case)
<b>Consumption</b>	$\leq 1\text{VA}$ (standard value)		H: 0-99.9%, no dew
<b>Allowable max. air velocity</b>	16 m/s	<b>Storage Temperature and Humidity</b>	-40 to 80°C; 20~60%RH

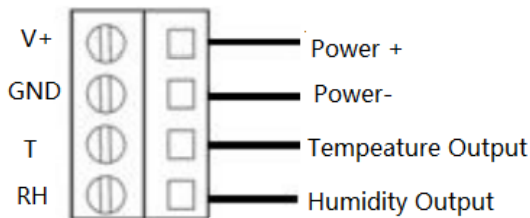
## ■ Specification



LCD Display

## ■ Diagram

MTH500HS: 4-20ma output Terminals,3 wire



MTH500HS: RS485 output Terminals

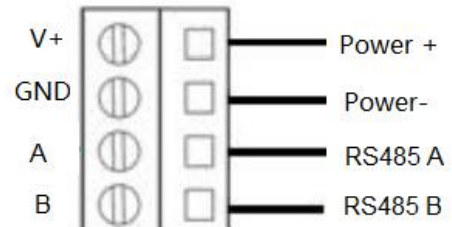


Diagram: 4-20mA Output, 2 wire

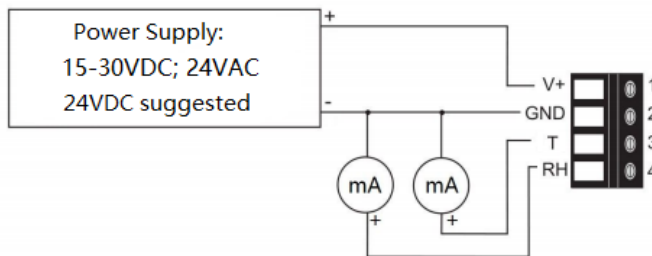
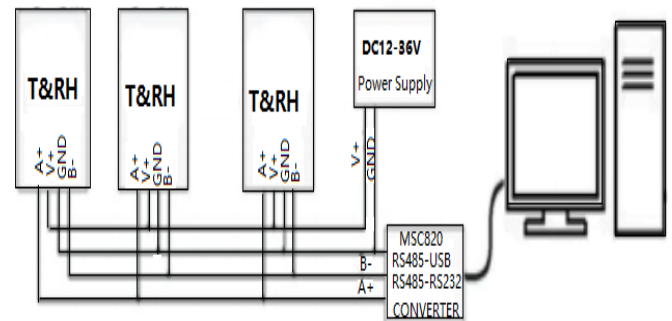
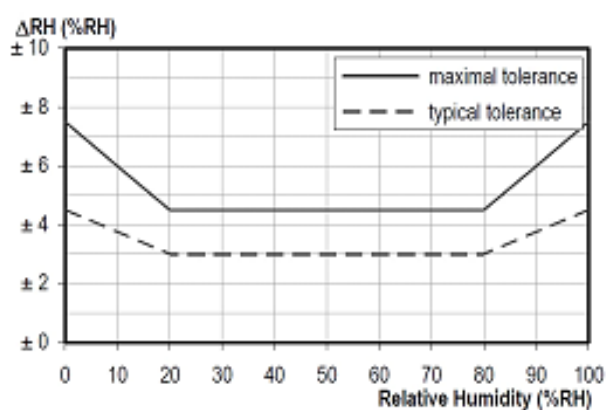
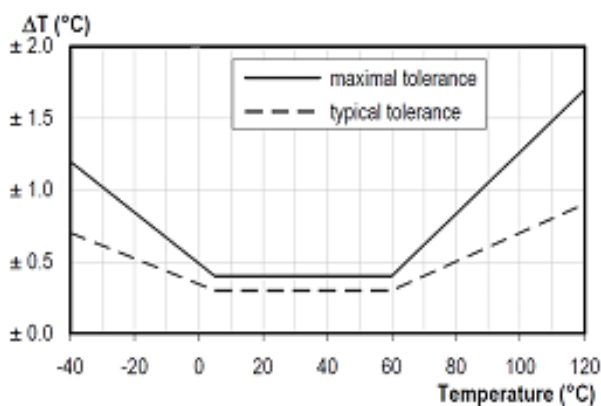


Diagram: RS485 Modbus



## ■ Accuracy

Analog Output: 4-20mA



## Order Code

Order Code: MTH500HS-DANS10N							Description
MTH500HS	-X	X	X	X	X	X	MTH500HS Duct Type high temperature and humidity Transmitter
Display	-N						None
	-D						with lcd display
Output	A						4-20mA
	R						RS485 Modbus
Process Connector	N						M27X2.0, fixed, standard
	P1						1/2"G (male), fixed
	P2						1/2"NPT (male), fixed
	PX						Customized, please advise the exact thread size you need
Probe Type				S			0-200degc 316LSS stainless steel probe, compatible with 316LSS
Probe insert length				10			Probe insert length: 100mm
				15			Probe insert length: 150mm
				20			Probe insert length: 200mm
				30			Probe insert length: 300mm
				35			Probe insert length: 350mm
				45			Probe insert length: 450mm
				50			Probe insert length: 500mm
				100			Probe length: 1000mm
			-X			Customized, max. 1m	
Pressure Resistance				N			800Kpa, standard default
				P			Higher than 800Kpa, max. 1.6MPa

## Tolerable Concentration of Main Gas Components List

Chemical	Gas Concentration	Harmless	Negative Effect
Carbon monoxide CO	Up to 100ppm	x	
Ammonia-NH3	Up to 500ppm	x	
Sulphur Dioxide-SO2	Up to 100ppm	x	
Formaldehyde-HCHO	Up to 6mg/m3	x	
Freon 113-C2Cl3F3	Up to 5000ppm, 39g/m3	x	
Chlonne-Cl2	Up to 0.5ppm, 15g/m3		x
Hydrogen Chloride-HCL			x
Hydrogen Fluoride HF			
Nitrogen Dioxide-NO2	Up to 120mg/m3	x	
Ethanol-CH3CH2OH (Liquid: for cleaning, gaseous: harmless)	Up to 100ppm	x	
Methanol-CH3OH (Liquid: for cleaning, gaseous: harmless)	Up to 40ppm	x	
Ozone-O3	Up to 2mg/m3	x	
Ultraviolet rays (at 300-400 nm & 2 J/CM2/time of exposure: appr. 5min)	Ultraviolet. Endangered area of the sensor surface is protected by a metallic layer	x	
Isopropanol-(CH3)2CHOH (Liquid: for cleaning, gaseous; harmless)	Up to 100ppm	x	
Ethylene oxide-C2H4O	Up to 2 ppm	x	
Hydrogen peroxide H2O2	Up to 140 mg/M3	x	
Chlomehan-CH3Cl			x

### Notes:

1. The chemical resistance data of our MTH500HS comes from laboratory environmental testing, and the data is for reference only.

2. The above table list is the tolerable concentrations of the main gas components.

Other chemical components not listed, it do not mean that the sensor will not be corroded by unlisted gas, which will be verified by further expansion experiments.