

THM80X Series (THM801 / 802 / 803)

Industrial High Accuracy Temp. & Humidity Transmitter



| Features |

- IP65 , rugged aluminum case, fit in variety harsh environment
- Capable of temperature compensation. Linear adjustment temperature & humidity by computer, analog output or option RS-485
- Measure high accuracy Temp. & humidity, reaction quickly, the sensor can work well after temporary condensation, long term stable in high humidity environment
- Process Temp. : up to 200°C, S.S. probe proof pressure : 20 bar, metal connector : installation repeatedly
- Switch multifunction physical quantities : [%RH] 、 [°C] 、 [mbar] 、 [g/kg] 、 [g/m³] 、 [kJ/kg]
- Calibration physical quantities, measuring range, analog output, station, etc
- Free calibration software : data logger / record 65535 datas / charts

| Applications |

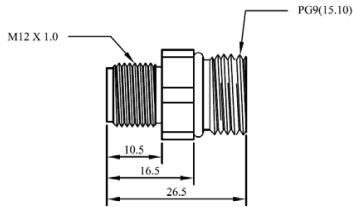
Semiconductor / Electronics / Industrial process monitoring / Air conditioning / Environmental ventilation control buildings / Factories / Hospitals / Clean rooms / Laboratories / Weather stations environmental monitoring / Storage rooms / Environmental chambers / Greenhouses / Mushroom farms / Paper / Printing Textiles / Steel and iron industry / Food / Chemical / Pharmaceutical / Biotechnology industry

| Specification |

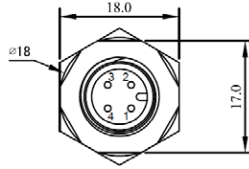
Input		Environmental	
Signal type	Capacitive humidity sensor & Pt 100 A class	Medium	Air
		Temp. Operating	Housing : -20 ... +80°C
			Housing with display : -20 ... +60°C
Output		Humid. Operating	Housing : 0 ... 95% (Non-condensing)
Output	0 ... 20 mA / 4 ... 20 mA / 0 ... 10 V	Probe operating	Wall type : -40 ... +80°C
Signal connection	3-wire		Duct type : -40 ... +120°C
Modbus	2 analog / option RS-485 (Programmable)		Remote type : -40 ... +200°C
Display type	LCD Module with back light, double line character	Storage temperature	-25 ... +60°C
Display range	upon request, one decimal place	Probe pressure resistance	10 bar
Height of character	5.55 mm		
Accuracy (at +25 °C)		Certification	
Temperature	$\pm 0.15^{\circ}\text{C} \pm 0.002^{\circ}\text{C} \times t_{\text{actual}}$	Certification	CE
Humidity (0 ... 90 %RH)	Nonlinear error : $\pm 1.2\% \text{RH}$		
	Hysteresis error : $\pm 0.8\% \text{RH}$	Protection	
	Repeatability error : $\pm 0.4\% \text{RH}$	IP rating	Housing : IP65 ; Probe : IP20
Humidity (90 ... 100 %RH)	$\pm 2\% \text{RH}$	Electrical protection	<input checked="" type="checkbox"/> Reverse polarity <input checked="" type="checkbox"/> Over-voltage <input checked="" type="checkbox"/> Short-circuit
Thermal sensitivity			
Temp. error	0.05%RH/°C	Installation	
Load resistance	Current output : Max. 500 Ω	Installation	THM801 : Wall type
	Voltage output : min. 100 KΩ		THM802 : Duct type
Output calibration(ZERO & SPAN)	Software / Keybord		THM803 : Remote type
Response time t90 (at 25 °C)	<20 sec (S.S.Metal grid filter with mesh)		
	<30 sec (Sintered filter)		
Electrical		Material	
Power supply	DC 24 V $\pm 10\%$	Housing	Aluminum alloy
Current consumption	DC 24 V : 60 mA	Probe	SUS 304
Electrical connection	M type : M12 connector with 2 m cable	Cable	Teflon
	N type : M16 metal cable gland and terminal block	Weight	THM801 : 455 g
			THM802 : 521 g
			THM803 : 635 g

*Please make sure the product and the device which connect with RS-485 are on common ground, avoid damaged product.

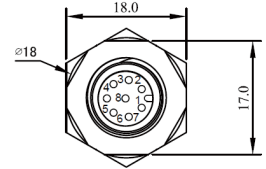
| Electric Connector | Unit : mm



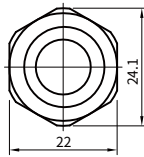
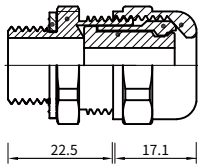
【M type (M12-4PIN connector)
RS-485 or analog



【M type (M12-8PIN connector)
RS-485+analog

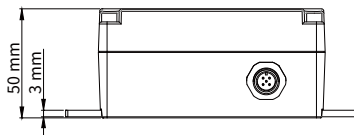
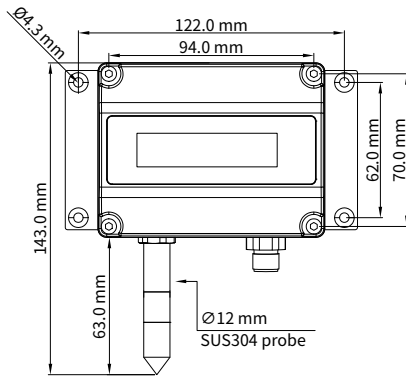


【N type (M16 cable gland)】

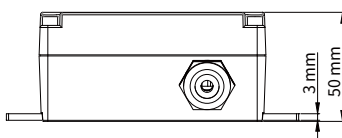


| Dimension |

THM801 (Wall)

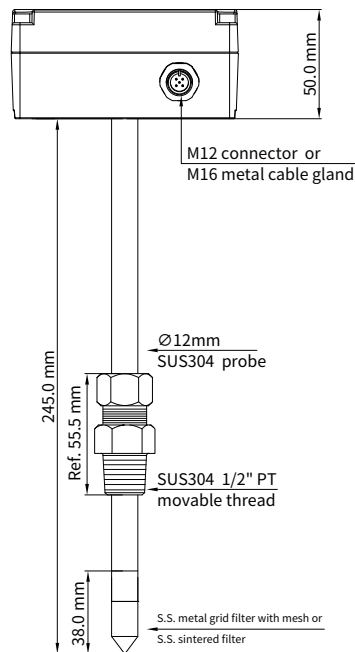


M type

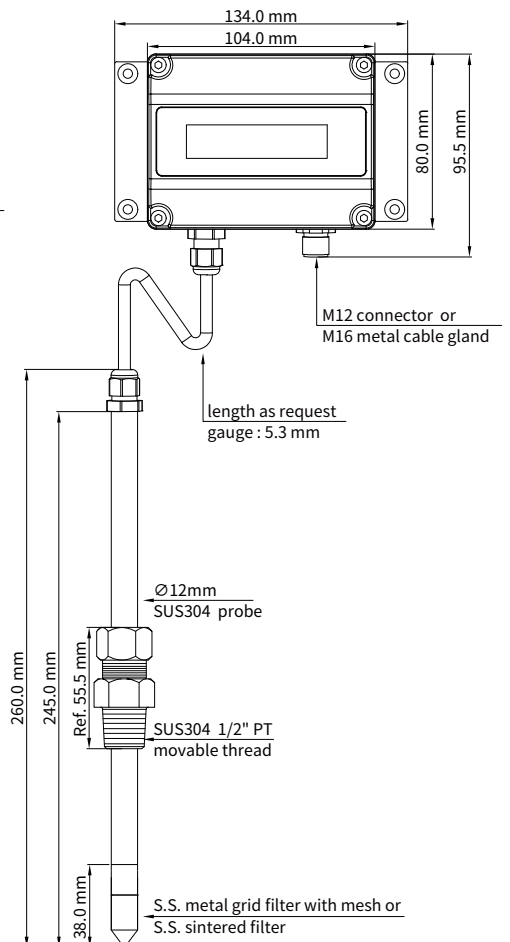


N type

THM802 (Duct)



THM803 (Remote)

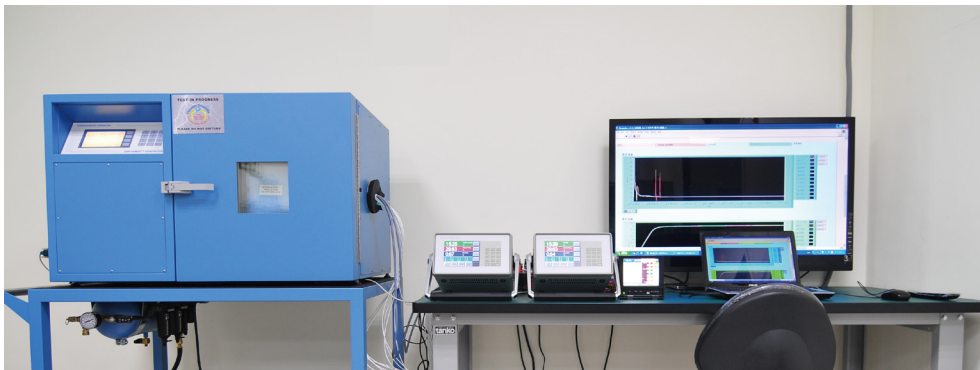


| Measuring Range List |

Beside temp. & dew point, other physical quantities range as default setting

Physical quantity	THM801 Wall type	THM802 Duct type	THM803 Remote type
Temperature(T)	-40°C ... +80°C	-40°C ... +120°C	-40°C ... +200°C
Humidity(H)	0 ... 100%RH		
Dew point(D)	-40 dp°C ... +60 dp°C		
Frost point(F)	-40 ... 0 fp°C		
Wet-bulb Temp.(W)	0 ... 100°C		
Vapor pressure(E)	0 ... 1100 mbar		
Mixture ratio(R)	0 ... 999 g/kg		
Absolute humidity(A)	0 ... 700 g/m ³		
Specific enthalpy(S)	0 ... 2800 kJ/kg		

| Temp. & Humidity QC Inspection System |

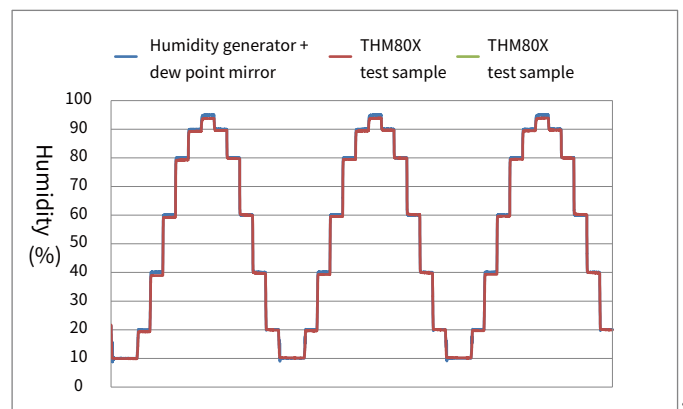
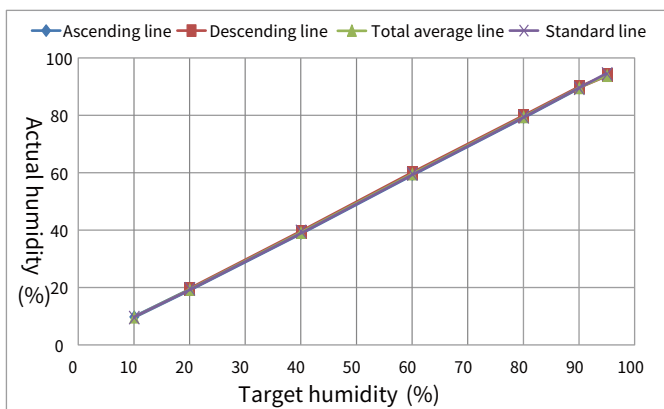


- System Facility
- Humidity generator
- Dew point mirror
- Laboratory level facility to produce products, and automatic QC inspection sheet printing and factory report

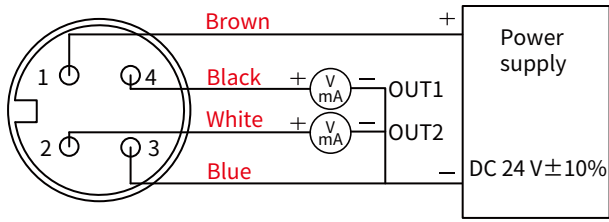
| 3-cycle curve |

※ According to IEC 61298 and ISO 17025 standard to measuring 3-cycle curve.

As the charts result, accuracy of test sample match with accuracy chart of humidity generator + dew point mirror

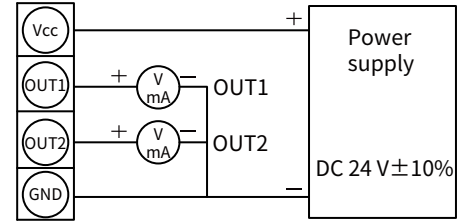


| Analog Diagram |



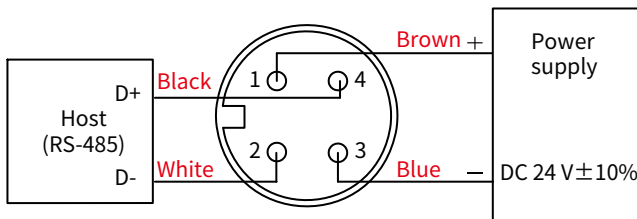
M12 connector

M type (4P)

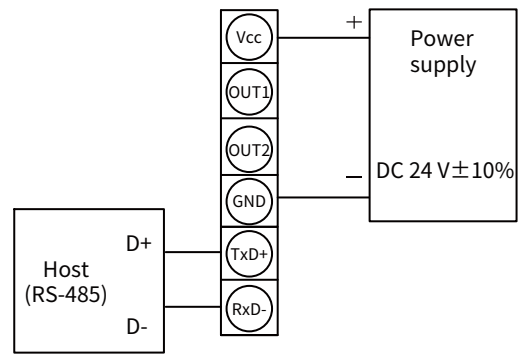


N type

| RS-485 Diagram |



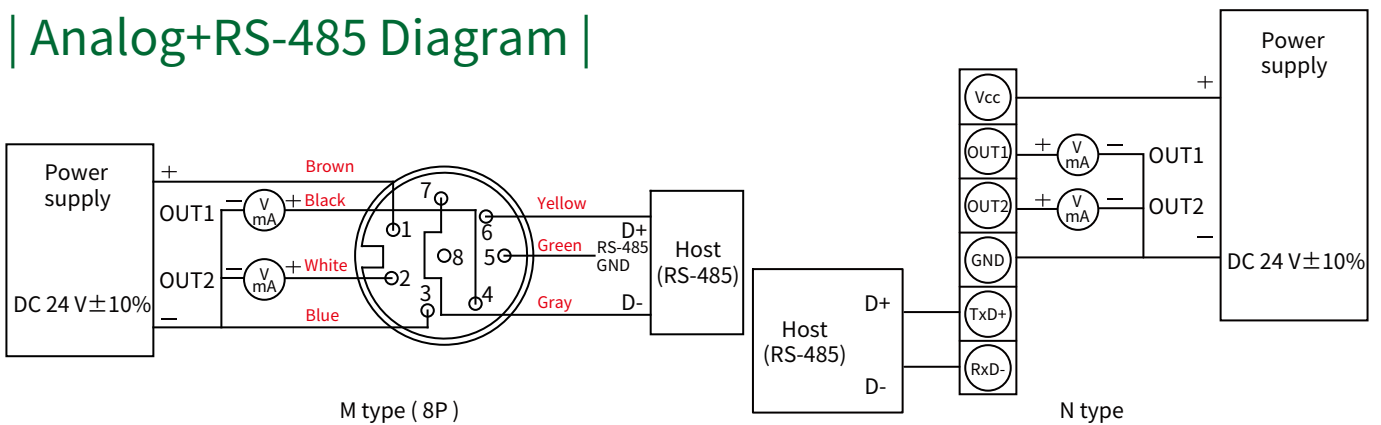
M type (4P)



N type

※ When output of ordering code is RS-485 (without analog), RS-485 diagram of default setting is M type.

| Analog+RS-485 Diagram |



M type (8P)

N type

Ordering Guide

THM80 **3** - **T** **48** **1** **H** **00** **1** - **D** **N** **S** **2** **U**

<p>Installation</p> <p>1 : Wall 2 : Duct 3 : Remote</p>	<p>Physical quantity output 1</p> <p>30 : 0 ... +50°C 38 : 0 ... +80°C 40 : 0 ... +100°C 42 : 0 ... +120°C 48 : 0 ... +180°C 47 : 0 ... +200°C 13 : -20 ... +40°C 14 : -40 ... +60°C 16 : -40 ... +120°C 18 : -40 ... +180°C 20 : -40 ... +200°C 49 : -70 ... +180°C 00 : As physical quantity measuring range list YY : Customized (up to 200°C)</p> <p>T : Temperature H : Humidity D : Dew point F : Frost-point W : Web-bulb temperature E : Vapor pressure R : Mixture ratio A : Absolute humidity S : Speific enthalpy N : RS-485 (Default Temp.)</p>	<p>Physical quantity scale 1</p> <p>1 : 4 ... 20 mA 2 : 0 ... 20 mA 6 : 0 ... 10 V 9 : RS-485</p>	<p>Signal output 1</p>	<p>Physical quantity output 2</p> <p>30 : 0 ... +50°C 38 : 0 ... +80°C 40 : 0 ... +100°C 42 : 0 ... +120°C 48 : 0 ... +180°C 47 : 0 ... +200°C 13 : -20 ... +40°C 14 : -40 ... +60°C 16 : -40 ... +120°C 18 : -40 ... +180°C 20 : -40 ... +200°C 49 : -70 ... +180°C 00 : As physical quantity measuring range list YY : Customized (up to 200°C)</p> <p>T : Temperature H : Humidity D : Dew point F : Frost-point W : Web-bulb temperature E : Vapor pressure R : Mixture ratio A : Absolute humidity S : Speific enthalpy N : RS-485 (Default Temp.)</p>	<p>Physical quantity output 2</p> <p>1 : 4 ... 20 mA 2 : 0 ... 20 mA 6 : 0 ... 10 V 9 : RS-485</p>	<p>Signal output 2</p>	<p>Display</p> <p>X : No D : Yes</p>	<p>Electrical connector</p> <p>N : M16 metal cable gland M : M12 connetor</p>	<p>Filter</p> <p>M : S.S. metal grid filter with mesh S : Sintered filter</p>	<p>Remote Cable Length (TEFLON)</p> <p>2 : 2 m 5 : 5 m - : Customized (Max. length : 5 m)</p>	<p>Other request</p> <p>W : Other request (Quote as demand) U : RS-485 + analog</p>
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| Additional Option Test Report |

For more detailed information please contact us.

■ ILAC / TAF

Calibration Laboratory - (ILAC / TAF) Test report.

(TAF accreditation : 3032, complying with ISO / IEC 17025) TAF has mutual recognition arrangement with ILAC MRA

Project	Measurand level or range
Hygrometer	Temperature : 0°C ... 69.5°C
	Humidity : 10% ... 95%

Project	Measurand level or range
Dew point transmitter	$\geq -80 \text{ dp}^\circ\text{C} \dots \leq 60 \text{ dp}^\circ\text{C}$

■ ISO 9001

Project	Measurand level or range
Temperature and Humidity	Temperature : 0°C ... 200°C
	Humidity : 0.1% ... 99.8%

Project	Measurand level or range
Dew point	$\geq -95 \text{ dp}^\circ\text{C} \dots \leq 60 \text{ dp}^\circ\text{C}$

