



THM8687

Industrial Multifunction Dew Point Transmitter (Duct /Remote)



Feature

- With temperature compensated and linear correction
- Physical quantity & temperature linear correction output by computer program
- Option : RS-485 interface and Modbus RTU protocol
- Option : quick metal connector to easy installation
- Industrial class sensor comes with high accuracy, long-term stability, and anti-condensation function.

Application

- Monitoring for storeroom / crisper / agriculture / food industry.
- Monitoring for industrial process / air conditioning / environmental ventilation control .
- Temperature & humidity measuring in hospital / pharmaceutical industry/ textile industry.
- Environmental monitoring for building / factory / clean room / Lab / weather station.

Specification

Input

input Capacitive Humidity Sensor & PT 100 Ω

measuring range list as below

Output

output 0 ... 20 mA / 4 ... 20 mA / 0 ... 1 VDC /

0 ... 5 VDC / 0 ... 10 VDC

signal connection 3-wire

modbus RS-485 (programmable)

linear accuracy (at + 25°C) temp. : ± 0.15°C ± 0.002°C x tactual

dew point : ± 3 dp°C ± (0.02 % F.S./°C)

temp. influence of body (at + 25°C) 0.02 % F.S./°C

load resistance output : current max. 500 Ω ; voltage min. 10KΩ

output calibration (ZERO & SPAN) software

adjustment range

response time t90 < 30S (SUS sintered filter)

(temp. at + 25°C : wind speed ≥ 1m/s) < 20S (metal net filter)

display type LCD Module with backlight, double line character

display range upon request, 2 decimal place

height of character 5.56 mm

Environment

media measured air

working temp. of body -20 ... + 60°C

working humidity of body 0 ... 95 RH % (non-cond.)

working temp. for LCD housing 0 ... 60°C

working temp. of probe -40 ... + 80°C
(THM87 Customization range Up 150°C max.)

storage temp. -25 ... + 60°C

Proof Pressure for probe 10 bar

Certification

CE certification EN 61326-1:2006 \ EN 61326-2-2:2006

Emissions

EN55011:2009 / A1:2010

Immunity

IEC 61000-4-2:2008

IEC 61000-4-3:2006 / A1:2007 / A2:2010

IEC 61000-4-8:2009

Electrical

power supply 8 ... 35VDC / 12 ... 30 VAC

current consumption DC 24V : 60mA / DC 12V : 120 mA

electrical connection AC 24V : 140mA / AC 12V : 230 mA

M12 connector (4P or 8P)

Installation

installation metal connector R1/2"

protection degree body IP : 65 (probe : IP 20)

electric protection ☉polarity protection ☉over-voltage ☉short circuit

Material

housing Aluminum alloy

probe stainless steel (SUS304) + PTFE

cable teflon

option fitting thread / metal mounting flange / shield

metal grid filter without mesh

weight THM86 : 521g

THM87 : 635g

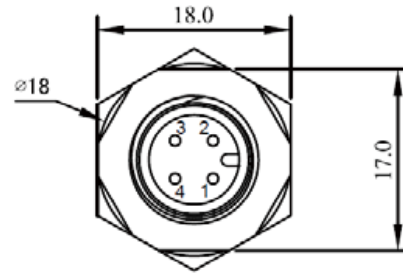
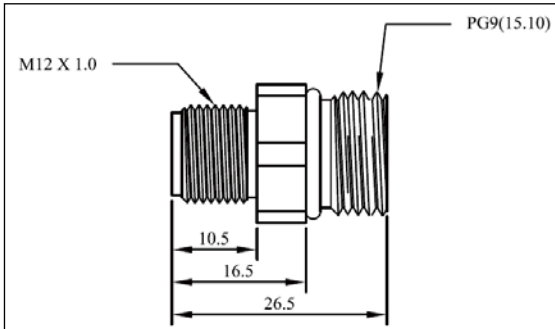
Measuring Range List

Physical quantity	Code	Min	Max	Unit
Temperature	T	-50	80	°C
Dew point	D	-50	60	dp°C
Frost point	F	-45	0	fp°C
Absolute humidity	V	0	32767(Analog)	ppm/v
Absolute humidity	G	0	32767(Analog)	ppm/w

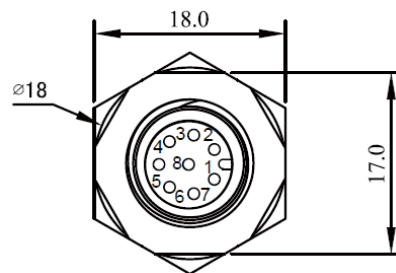
※ frost point (F), absolute humidity-volume (V), absolute humidity-volume (G), please refer to the measured range list

Electric Connector unit : mm

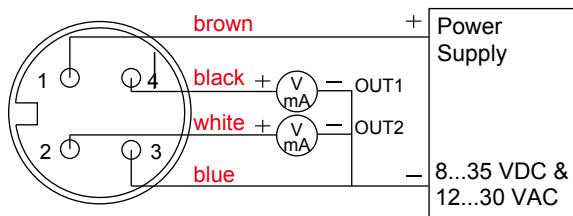
【 M type (M12-4PIN metal connector) 】 RS-485 or analogue



【 M type (M12-8PIN metal connector) 】 RS-485+analogue



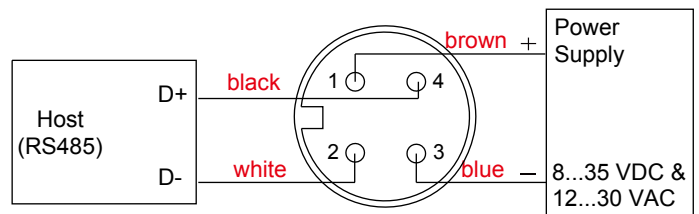
Analogue Diagram



M12 connetor

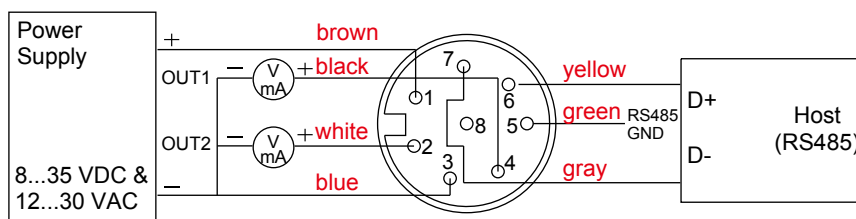
M type (4P)

RS-485 Diagram



M type (4P)

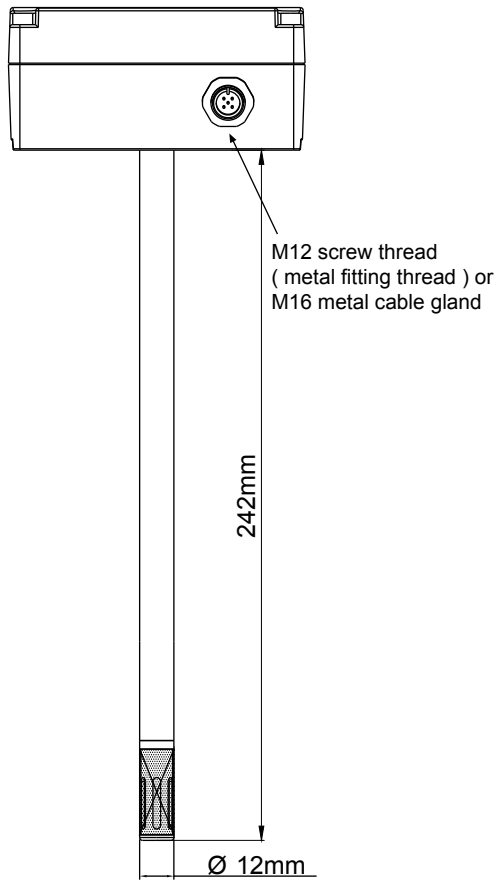
Analogue + RS-485 Diagram



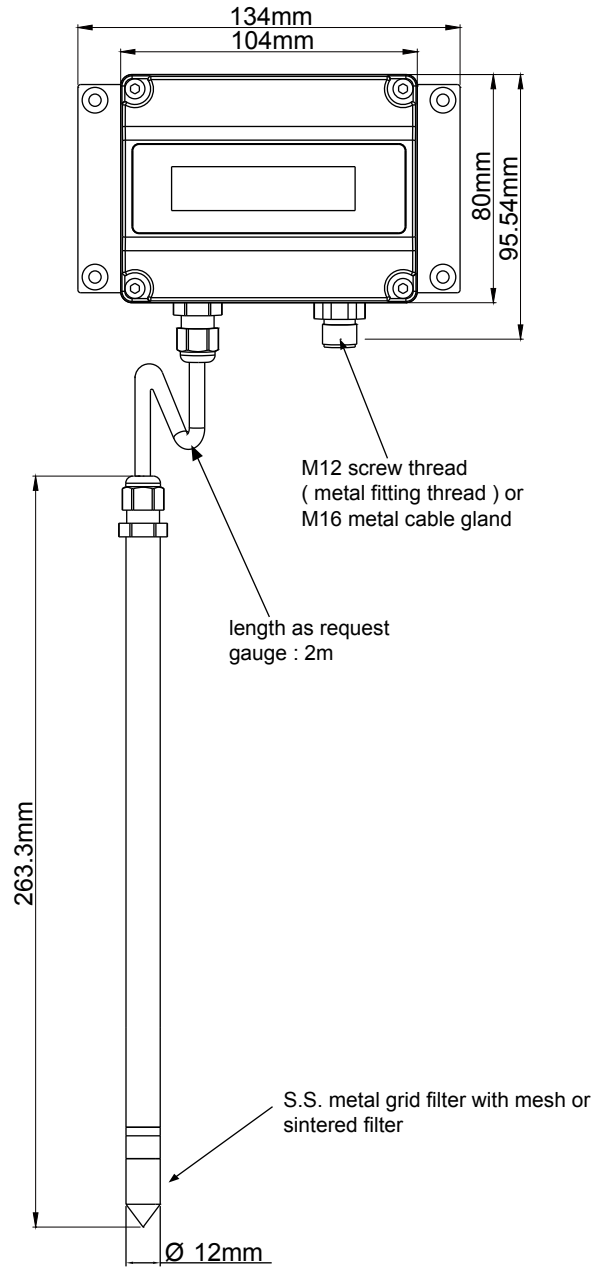
Q type (8P)

Dimension unit : mm

THM86(duct)



THM87(remote)



Ordering Guide

Type	THM	87	—	T	30	1	D	14	1	—	D	M	M	2
Installation	duct remote	86 87	— —											
Physical Quantity Output 1	temp. output dew point temp. frost point temp. absolute humidity (ppm / v) absolute humidity (ppm / w) RS-485 (default dew point) customize range			T D F V G N Y										
Physical Quantity Scale 1	-40 ... 80 °C 0 ... 50 °C 0 ... 80 °C -20 ... 40 dp °C -40 ... 60 dp °C -60 ... 20 dp °C -80 ... 20 dp °C -60 ... 60 dp °C as physical quantity range list customize range				20 30 38 13 14 17 19 60 00 YY									
Signal Output 1	4 ... 20 mA 0 ... 20 mA 0 ... 10V 0 ... 5V 0 ... 1V RS-485 customize range					1 2 6 7 8 9 Y								
Physical Quantity Output 2	temp. output dew point temp. frost point temp. absolute humidity (ppm / v) absolute humidity (ppm / w) RS-485 (default dew point) customize range						T D F V G N Y							
Physical Quantity Scale 2	-40 ... 80 °C 0 ... 50 °C 0 ... 80 °C -20 ... 40 dp °C -40 ... 60 dp °C -60 ... 20 dp °C -80 ... 20 dp °C -60 ... 60 dp °C as physical quantity range list customize range							20 30 38 13 14 17 19 60 00 YY						
Signal Output 2	4 ... 20 mA 0 ... 20 mA 0 ... 10V 0 ... 5V 0 ... 1V RS-485 customize range								1 2 6 7 8 9 Y					
Display	no yes										X D			
Electric Connector	M12 metal connector											M		
Filter	S.S. metal grid filter with mesh sintered filter												M S	
Remote Cable	2 m TEFLON cable other length (< 2m)													2 —
Option / Other Request	other request (quote as demand) RS-485 + analogue													W U

*Please make sure the product and the device which connect with RS485 are on common ground, avoid damaged product.

| Additional option (ILAC / TAF) Test report |



Additional option : Yuden standard calibration laboratory test report (TAF accreditation: 3032) complying with ISO /IEC 17025. TAF has mutual recognition arrangement with ILAC MRA

Project	Measurand level or range
Dew point hygrometer	≥-80°C ... ≤60°C