



THS86/87

# Industrial Multifunction Dew Point Transmitter



## Application

### 〈 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 $\Omega$
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 $^{\circ}\text{C}$ )	temp. : $\pm 0.15^{\circ}\text{C} \pm 0.002^{\circ}\text{C} \times \text{tactical}$ dew point : $\pm 3 \text{ dp }^{\circ}\text{C} \pm (0.02 \% \text{ F.S. } / ^{\circ}\text{C} )$
temp. influence of body ( at + 25 $^{\circ}\text{C}$ )	0.02 % F.S. / $^{\circ}\text{C}$
load resistance	current output max. 500 $\Omega$ voltage output min. 10 K $\Omega$
output calibration ( ZERO & SPAN)	software
adjustment range	
response time t90	< 30S ( SUS sintered filter ) ( temp. at +25 $^{\circ}\text{C}$ ; wind speed $\geq 1\text{m/s}$ ) < 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 $^{\circ}\text{C}$
working humidity of body	0 ... 95 RH % ( non-cond. )
working temp. for LCD housing	0 ... 60 $^{\circ}\text{C}$
working temp. of probe	-40 ... + 80 $^{\circ}\text{C}$
storage temp.	-25 ... + 60 $^{\circ}\text{C}$
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/12~30VAC
current consumption	DC 24V: 60mA / DC 12V: 120mA
electrical connection	AC 24V: 140mA / AC 12V: 230mA 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	PC fire-proof class ( PC-110 ) ( UL94V-2 )
probe	stainless steel ( SUS304 ) + PTFE
cable	teflon
option	fitting thread / metal mounting flange / shield metal grid filter without mesh
weight	THS86:425g / 451g ( display ) THS87:450g / 477g ( display )

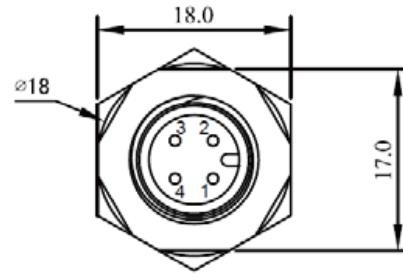
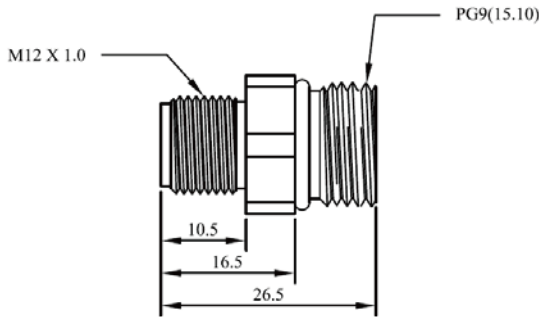
## Measuring Range List

physical quantity	code	Min	Max	unit
temperature	T	-80	80	$^{\circ}\text{C}$
dew point	D	-80	60	dp $^{\circ}\text{C}$
frost point	F	-80	0	fp $^{\circ}\text{C}$
absolute humidity	V	0	32767(analogue)	ppm/v
absolute humidity	G	0	32767(analogue)	ppm/w

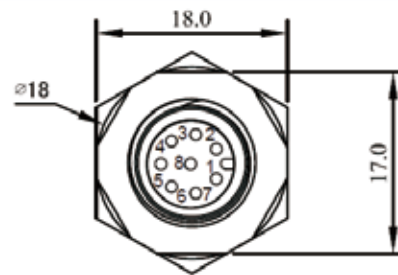
※ frost point (F), absolute humidity-volume (V), absolute humidity-volume (G), please refer to the measured range list

Electric Connector

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

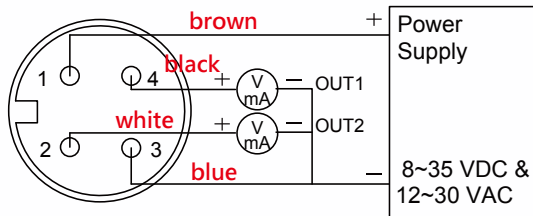


【 M type (M12-8PIN metal connector) 】 RS-485+analogue



unit : mm

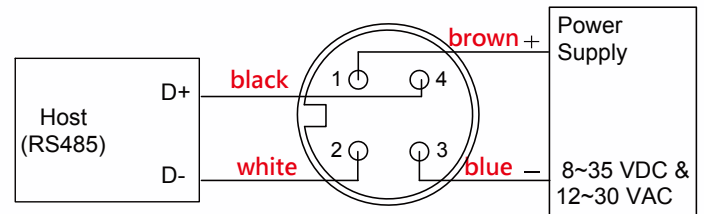
Analogue Diagram



M12 connetor

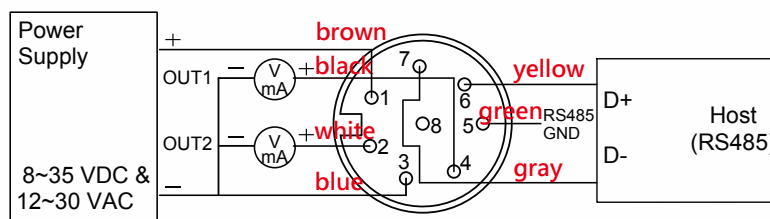
M type ( 4P )

RS-485 Diagram



M type ( 4P )

Analogue + RS-485 Diagram

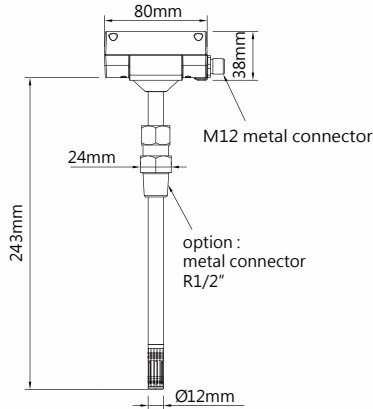


Q type ( 8P )

**Dimension**

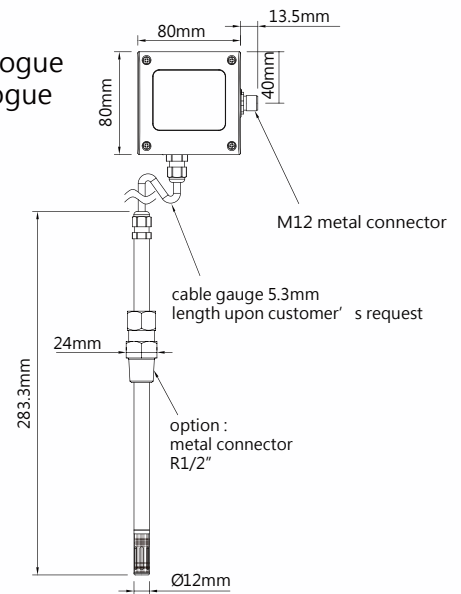
**THS86(duct)**

M type (4P) : RS-485 or analogue  
 Q type (8P) : RS-485 + analogue



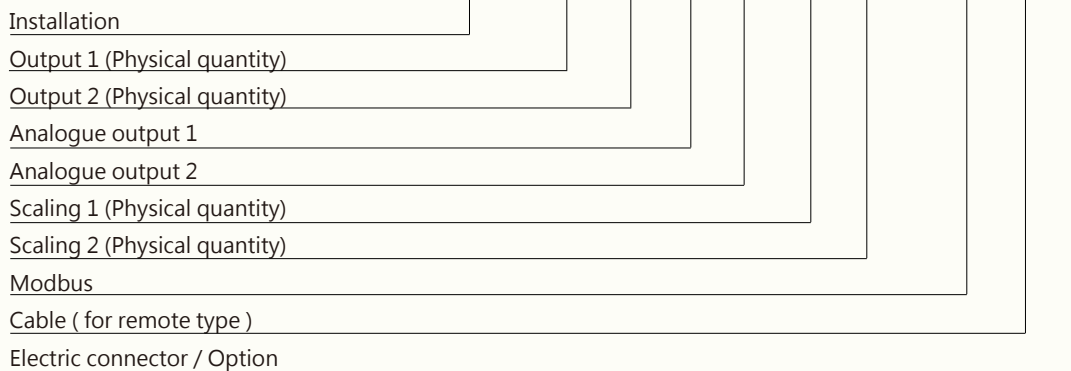
**THS87(remote)**

M type(4P) : RS-485 or analogue  
 Q type(8P) : RS-485 + analogue



**Ordering Guide**

Ordering Code -----> **THS 87 - Y Y Y Y - YY YY - 1 2 M**



**【Ordering item】**

Installation	code	Output 1	code	Output 2	code	Analogue output 1	code	Analogue output 2	code
duct	86	temp. output	T	temp. output	T	4~20mA	1	4~20mA	1
remote	87	dew point temp.	D	dew point temp.	D	0~20mA	2	0~20mA	2
		frost point temp.	F	frost point temp.	F	0~10V	6	0~10V	6
		absolute humidity(ppm/v)	V	absolute humidity(ppm/v)	V	0~5V	7	0~5V	7
		absolute humidity(ppm/w)	G	absolute humidity(ppm/w)	G	0~1V	8	0~1V	8
		RS-485 ( default dew point)	N	RS-485 ( default dew point)	N	RS-485	9	RS-485	9
		customize range	Y	customize range	Y	customize range	Y	customize range	Y
Scaling 1	code	Scaling 2	code	Modbus	code	Cable	code	Electric connector / Option	code
-40~80°C	20	-40~80°C	20	analogue	0	2 m cable (THS87)	2	M12 (4P) metal connector	M
0~50°C	30	0~50°C	30	RS-485	1	5 m cable (THS87)	5	( with 2 m cable )	
0~80°C	38	0~80°C	38	RS-485 & analogue	2	other length	W	M12 (8P) metal connector	Q
-20~40 dp °C	13	-20~40 dp °C	13	* Q type-M12(8P) metal connector				( with 2 m cable )	
-40~60 dp °C	14	-40~60 dp °C	14					display	D
-60~20 dp °C	17	-60~20 dp °C	17					other request	W
-80~20 dp °C	19	-80~20 dp °C	19						
-60~60 dp °C	60	-60~60 dp °C	60						
as physical quantity	00	as physical quantity	00						
range list		range list							
customize range	YY	customize range	YY						