

## PCD03 High Pressure Dew Point Transmitter



### 〈Feature〉

- High accuracy and long-term stability
- Capable of temperature compensation and linear adjustment
- Industry sensor with non- cond, bearable pressure : 16 bar
- Analogue output : 0 ... 1V / 0 ... 5V / 1 ... 5V / 0 ... 10V / 2 ... 10V / 0 ... 20mA / 4 ... 20mA
- Standard MODBUS RTU protocol, RS-485 communication interface
- More size of connector for different environment to be easily installed
- High pressure, low humidity, dew point Max scaling range - 100 ... + 60 dp°C
- Free programmable software which can adjust dew point range and provide more physical quantities, dew point, frostpoint, absolute humidity and so on to choose

### 〈Application Field〉

- Compressed air system / Freezer / Adsorption machine
- Plastic dryer / Industrial drying process
- Paper / Chemical process monitoring

## Specificatio

### Input

Input type	Capacitive humidity sensor & PT 100 $\Omega$
Working range of dew point	- 60 ... +60 dp $^{\circ}\text{C}$

### Output

Max. scaling range	Dew point : - 100 ... + 60 dp $^{\circ}\text{C}$
Dew point switch to another	Frost point : - 60 ... + 0 fp $^{\circ}\text{C}$ ;
Physical quantity range	Absolute humidity ( volume ) 0 ... 50000 ppm/v Absolute humidity ( weight ) 0 ... 50000 ppm/w
Output signal	Standard RS-485 & 1 analog output 0 .. 20mA / 4 .. 20 mA / 0 .. 1VDC / 0 .. 5VDC / 0 .. 10VDC
Signal connection	3-wire
Modbus	Standard RS-485 & 1 analog output
Linear accuracy ( working range of dew point : -60 ... +60 dp $^{\circ}\text{C}$	$\pm 2$ dp $^{\circ}\text{C}$ ( at + 25 $^{\circ}\text{C}$ ) $\pm$ ( 0.02%FS/ $^{\circ}\text{C}$
Load resistance	Current output : max. 500 $\Omega$ / voltage output : min. 10K $\Omega$
Output calibration ( ZERO & SPAN adjustment range	Software
Responsetimet90(temp.at+25 $^{\circ}\text{C}$	< 20S

### Environment

Media measured	Air
Operating temp. for housing	- 40 ... + 80 $^{\circ}\text{C}$
Operating humidity for housing	0 ... 95 RH % ( non-cond.
Operating temp. for probe	- 70 ... + 80 $^{\circ}\text{C}$
Storage temperature	- 25 ... + 60 $^{\circ}\text{C}$
Bearable pressure	16 bar

### Electrical

Power supply	8 ... 35 VDC & 10 ... 30 VAC
Current consumption	DC24V, 50 mA M12 connector
Electrical connection	

### Installation

Installation	Metal connector
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### Protection

Protect degree	Body IP : 65 ( probe : IP20
	®Polarity protection ®Over-voltage ®Short circuit

### Material

Housing	S.S. ( SUS304 )
Probe	S.S. ( SUS304 ) / SUS sintered filter ( SUS316 )
Weight	233g

### Factory setting

Measuring range of dew point : - 100 ... + 20 $^{\circ}\text{C}$ ;
Output : 4 ... 20 mA & standard RS-485

## Ordering Guide

Type	PCD03	—	C	1
Dew point measuring range	-20 ... +20 $^{\circ}\text{C}$	—	A	
	-40 ... +20 $^{\circ}\text{C}$	—	B	
	-100 ... +20 $^{\circ}\text{C}$	—	C	
Connector	1/2"PT ( R1/2")			1
	1/2"G			2
	5/8"UNF			3

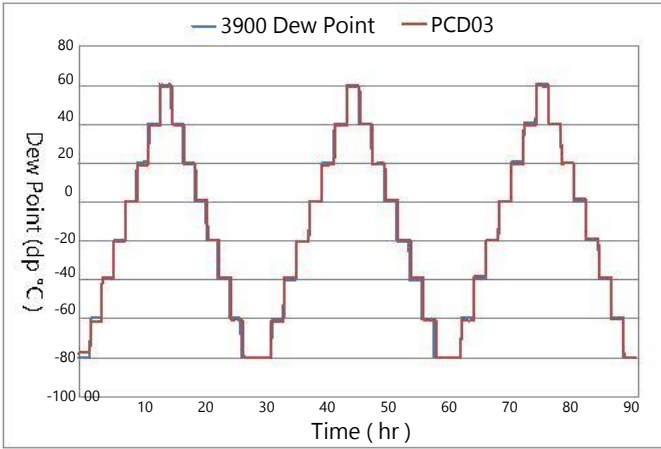
## Dew Point Automatic Inspection

### System facility :

- Thunder 3900 humidity generator
- MBW 373 dew point mirror, traceability to national standards - National Institute of Standards and Technology (NIST)
- Laboratory level facility to produce products, and automatic QC inspection sheet printing and factory report



## 3-cycle curve

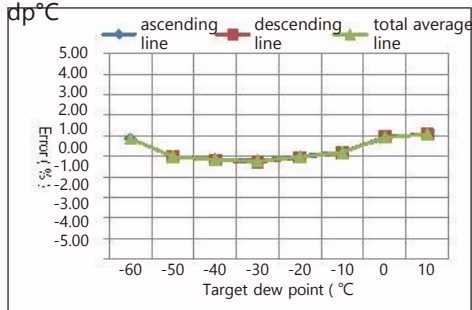


※ According to IEC 61298 and ISO 17025 standard to measuring 3-cycle curve.  
As the charts result, accuracy of test sample match with accuracy chart of humidity generator + dew point mirror.

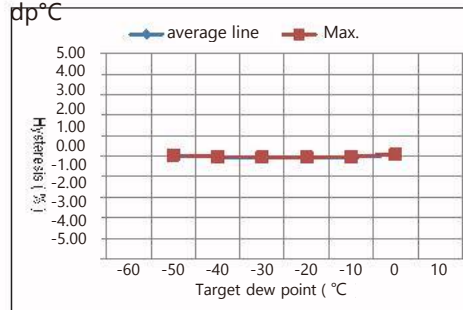
## Accuracy Error curve

※ According to IEC 61298 and ISO 17025 standard to measure

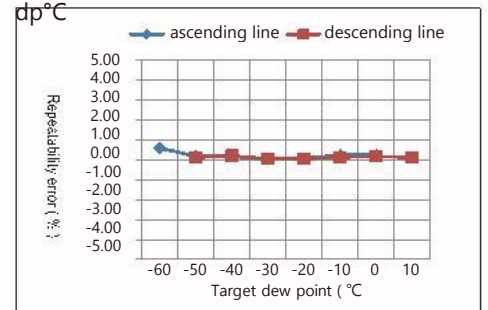
• Nonlinear error : 1.07



• Hysteresis error : 0.10



• Repeatability error : 0.61



## Reaction speed

Before and after upgrade of PCD02 high pressure dew point transmitter.

Comparison benchmark:

Test environment 1 : Tested in an alumina chamber

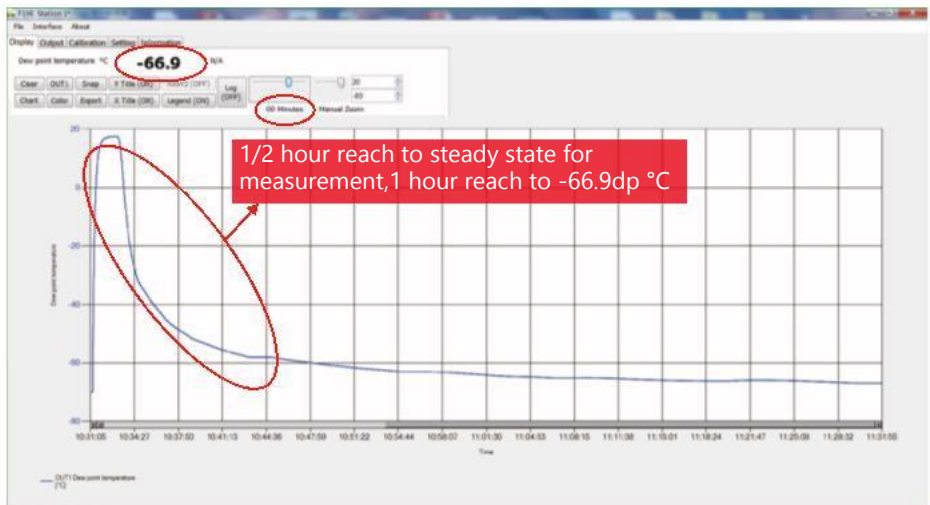
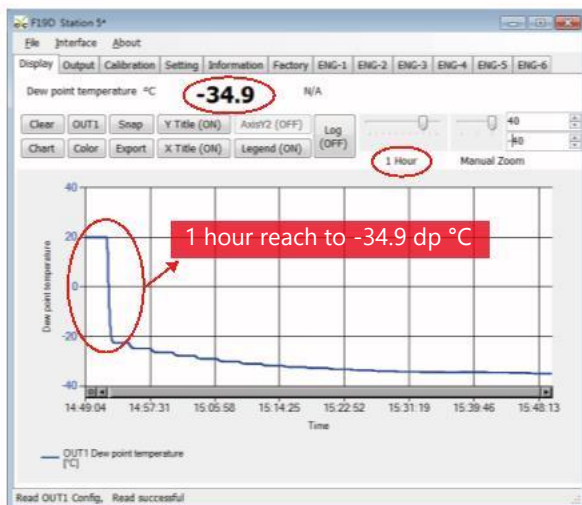
Test condition 2 : PCD02 and PCD03 are both performed by 20 dp °C

PCD02 :

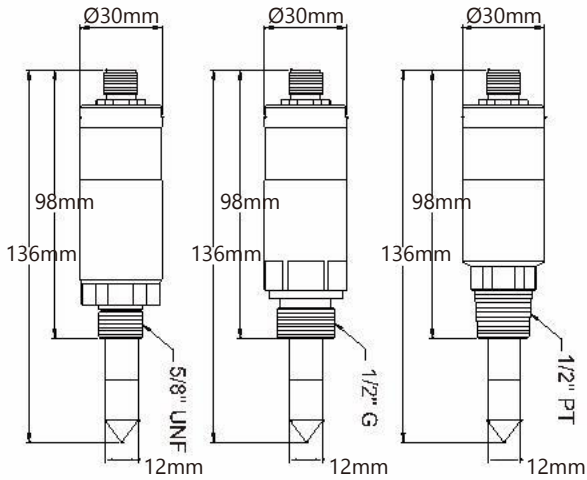
1 hour reach to -34.9 dp °C , 3 hours reach to steady state for measurement

PCD03 (Upgrade version):

1/2 hour reach to steady state for measurement,  
1 hour reach to -66.9dp °C

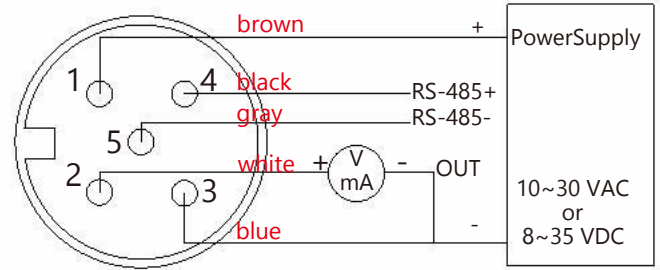


## Dimension



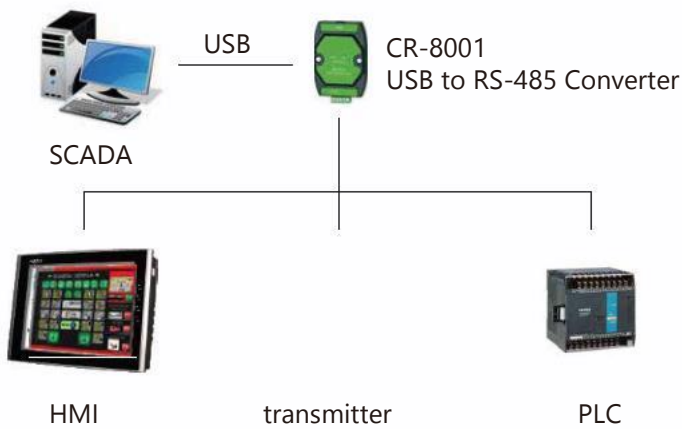
※ Standard — PVC-5PIN 2M waterproof cable

## Diagram



M12 connector

## USB to Isolated RS485



※ Require Device

1. PC
2. RS-485 to USB Converter
3. power supply
4. THS88 PLUS UI software

## | 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