Operation Manual

eyc-tech PHD330

Industrial Differential Pressure Transmitter



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1. Security considerations

Please read this Specification carefully, prior to use of this, and keep the manual properly, for timely reference.

Solemn Statement：

This product can not be used for any explosion-proof area.

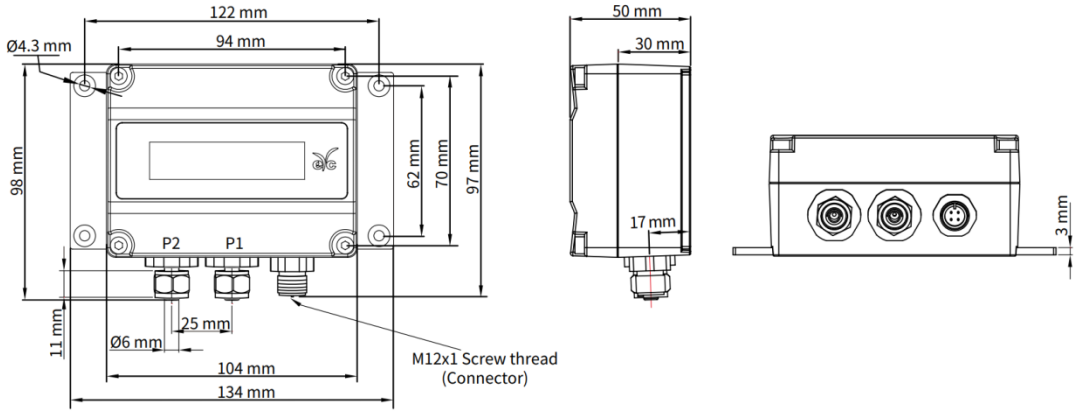
Do not use this product in a situation where human life may be affected.

eyc-tech will not bear any responsibility for the results produced by the operators！

Warning!

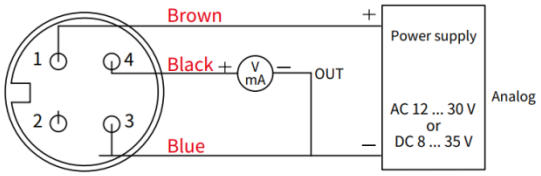
- Installation and wiring must be performed by qualified personnel in accordance with all applicable safety standards.
- This product must be operated under the operating conditions specified in manual to prevent equipment damages.
- Please using the product under the ordinary pressure, or it will influence safe problem.
- This product must be operated under the operating condition specified in this manual to prevent equipment damages.
- This product must be operated under the normally atmospheric condition to prevent equipment damages.
- To prevent products damage, always disconnect the power supply from the product before performing any wiring and installation.
- All wiring must comply with local codes of indoor wiring and electrical installation rules.
- Please use crimp type terminal.
- To prevent personal injury, do not touch the moving part of product in operation.
- It may cause high humidity atmosphere during the product was breakdown. Please take safety strategy.

2. Dimension

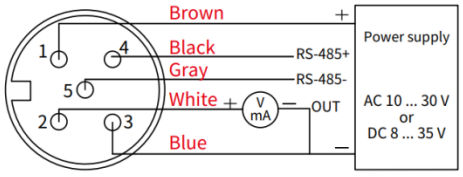


※P1 / P2：Connected to Ø6 PVC / PTFE compressed air pipe

3. Connection Diagram

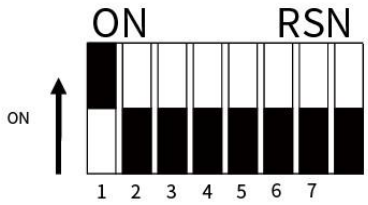


4P M12 Connector + Analog



5P M12 Connector+RS-485

4. DIP Switch



【Function】

1.Activate / deactivate DIP switch
3~4.Switch measuring range-1
5.Switch measuring range-2
6.Linear / Square root, output switching
7.Filtering On / Off

Switch 1: Activate / deactivate DIP switch

The function of DIP switch_3 ... 7 is only effective while DIP switch_1 is toggled to "On".

STATUS	On	Off
DIP switch 1		

Switch 3 & 4: Switch measuring range-1

User can switch measuring range by toggling switch_3&4 according to the table below. Please note that when switch_3&4 are both toggled to "On", the measuring range is set as factory default or the range set in user software by user.

(unit: Pa)

DIP switch 3	DIP switch 4	Range(20)	Range(30)	Range(40)
		300	1000	5000
		500	1600	7500
			2500	10000
		Upon request		

If user switch measuring range by DIP switch, the accuracy is for reference only.

Switch 5: Switch measuring range-2

User can toggle switch_5 to choose unidirectional or bidirectional of measuring.

Ex: When the maximum measuring value is 300 Pa

Switch_5 "On" : unidirectional, 0...300 Pa

Switch_5 "Off" : bidirectional, -300...300 Pa

STATUS	0 ... 100 %	-100 ... 100%
DIP switch 5		

Switch 6: Linear / Square root, output switching

Square root output is for air velocity application. With proper instrument, air velocity can be calculated from the square root of differential pressure.

STATUS	√	LINEAR
DIP switch 6		

The following formulas are used to convert linear signal to a square root extraction type:
For 4...20 mA output:

$$Output_{SqRt} = 4mA + (4 \times \sqrt{} (Output_{Linear} - 4mA))$$

For 0 ... 10 V output:

$$Output_{SqRt} = \sqrt{} 10 \times \sqrt{} Output_{Linear}$$

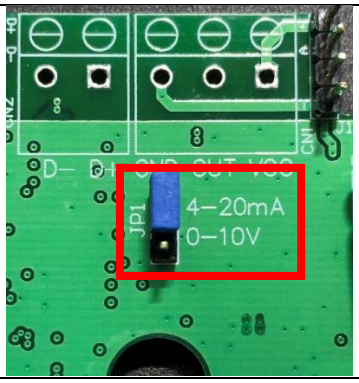
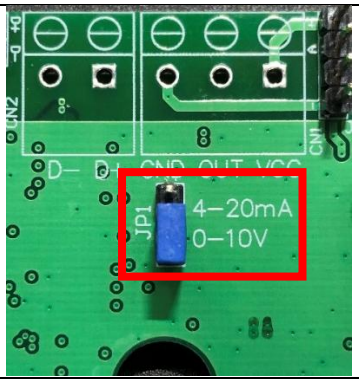
Switch 7: Filtering On/Off

User can toggle switch_7 to turn on / off signal filtering function. When turned on, filtering function will follow setting in user software.

STATUS	On	Off
DIP switch 7		

5. Analog Output setting

User can choose 4 ... 20 mA or 0 ... 10 V for analog output by placing jumper to the corresponding places shown in the table below.

	
4 ... 20 mA	0 ... 10 V

*** User must do a power cycle after changing jumper placement.**

6. Autozero

This button allows user to set the current pressure to zero point. It is required to press the button about 5 seconds, and user can see LED2 will turn on. Then user can release this button and will see the LED2 flashing, and the new zero point has been set.

This button also allows user to restore factory default setting. It is required to press the button about 10 seconds, user will first see LED2 turn on then off. Then user can release this button and will see the LED2 flashing, and the new zero point has been set.



7. RS-485 and Modbus

PHD330 integrate a RS-485 interface for digital communication as a option feature. Based on Modbus protocol makes the general convenience on PLC, HMI and PC connection. For Modbus protocol information please attached the file from website to download. Besides the PLC, HMI application, the user software provide the device setting and data logging function, it also can free download from website

Technical Data

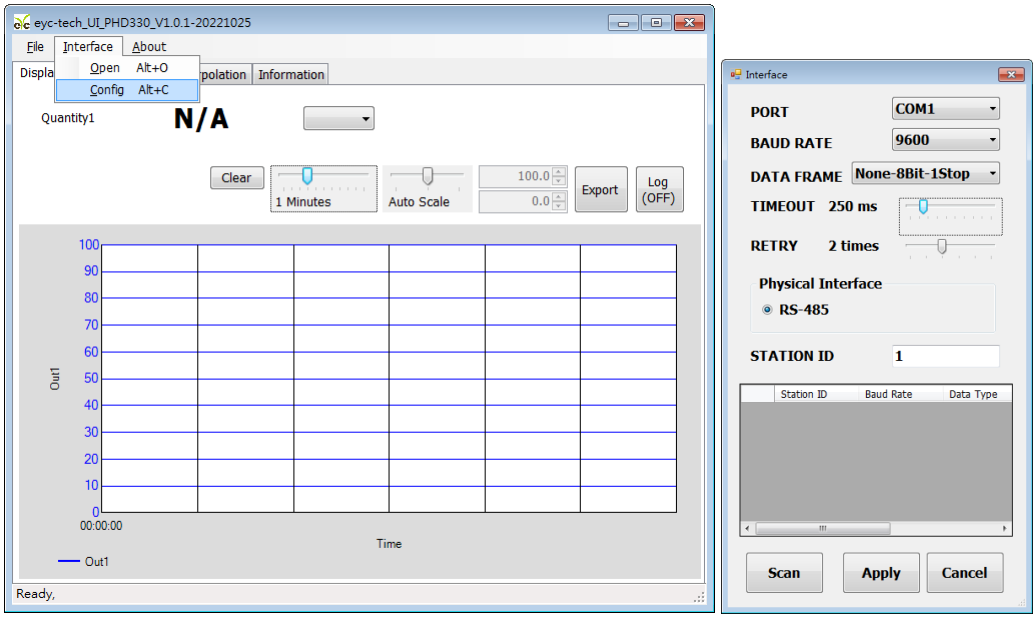
- Max. network size: 32 transmitters
- Communication: with COM-Port (serial interface) of PC
- Max. network expansion: 1200m (3937ft) total length at 9600 baud
- Transmission rate: 9600, 19200, 38400, 57600, 115200 Baud
- Parity: None, Even, Odd
- Data length: 8 bit
- Stop bit: 1 or 2 bit
- Factory default Station address = 1, Data format= 9600, N81

8. User Software

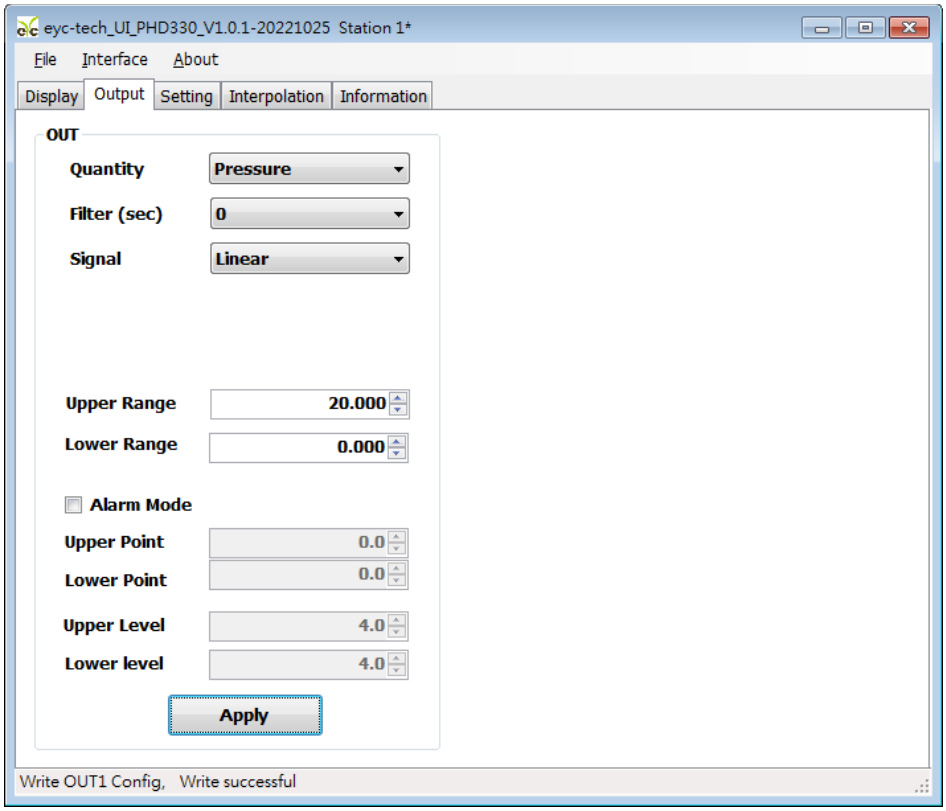
1. Hardware connection: Connect the PHD330 to PC by USB to RS-485 converter.
2. Check the COM port number from Computer Management



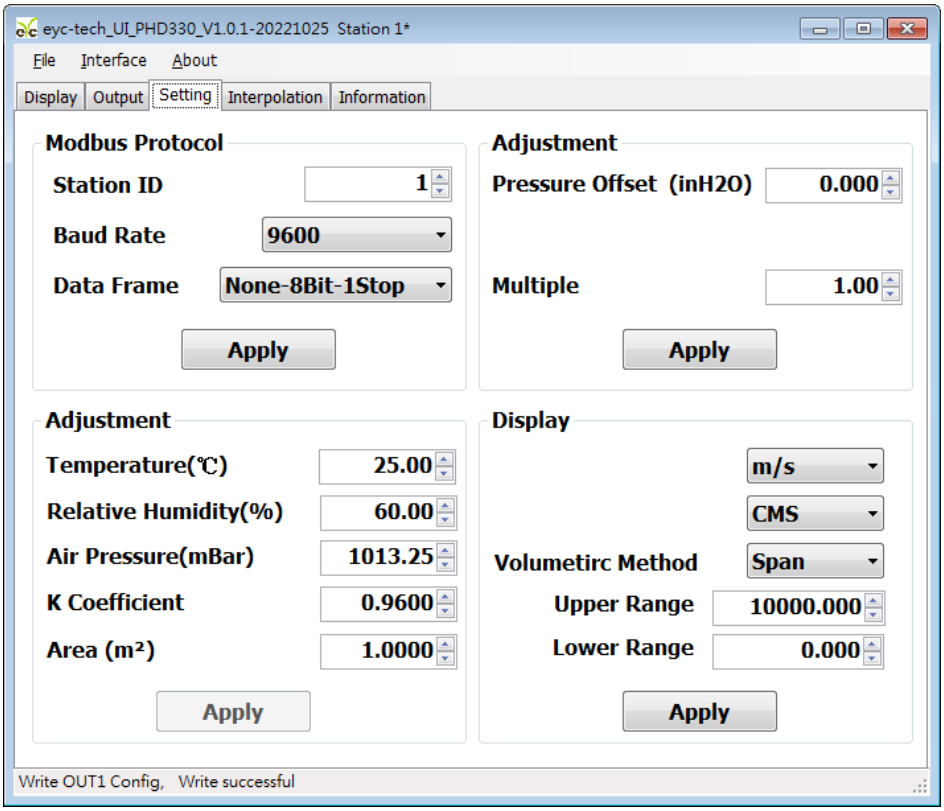
3. Open the PHD330 UI, go to function "Interface", click item "Config" and then setting COM port, BAUD rate and data format, pressed "Scan" bottom for scan devices and "Apply" for connection.



4. Setting on Analog Output
   i. Quantity: Pressure
   ii. Filter (sec): 0, 5, 10, 20, 25 seconds
   iii. Signal: Linear / Square root extraction
      - LCD shown the √ mark on left-low side and red green of LED2 flash slowly while the square root extracted function has active.
   iv. Upper Range, Lower Range: Range for Span of Upper and Lower



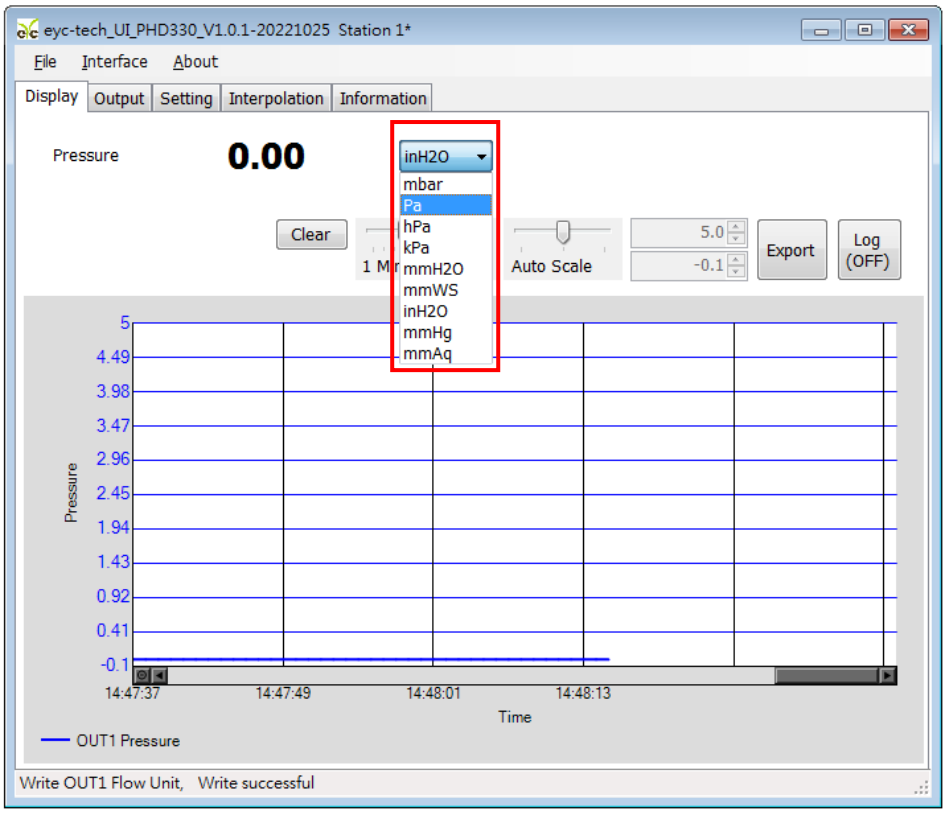
5. Setting on RS-485 and offset adjustment
   i. Station ID: 1~247
   ii. Baud Rate: 9600 / 19200 / 38400 / 57600 / 115200
   iii. Data Frame: None-8Bit-1Stop / None-8Bit-2Stop / Even-8Bit-1Stop / Even-8Bit-2Stop / Odd-8Bit-1Stop / Odd-8Bit-2Stop /
   iv. Pressure Offset adjustment, unit available in inH2O only
   v. Multiple: The multiple factor of measuring value, from 0.01 to 100
   vi. Temperature (℃): gas temperature
   vii. Relative Humidity (%): gas humidity
   viii. Air Pressure (mBar): gas pressure
   ix. K Coefficient: Pitot tube flow coefficient
   x. Area (m^2): pipe cross-sectional area
   xi. Unit of Velocity Rate
   xii. Unit of Volume Rate if Area mode or display label if Span mode
   xiii. Calculation method of volumetric rate: Selecting Span means the volume flow rate is calculated according to the upper and lower points of the volume range, and selecting Area means the volume flow rate is calculated by multiplying the converted flow velocity by the flow coefficient and the pipe cross-sectional area.
   xiv. Upper Range, Lower Range: Volume Span of Upper and Lower



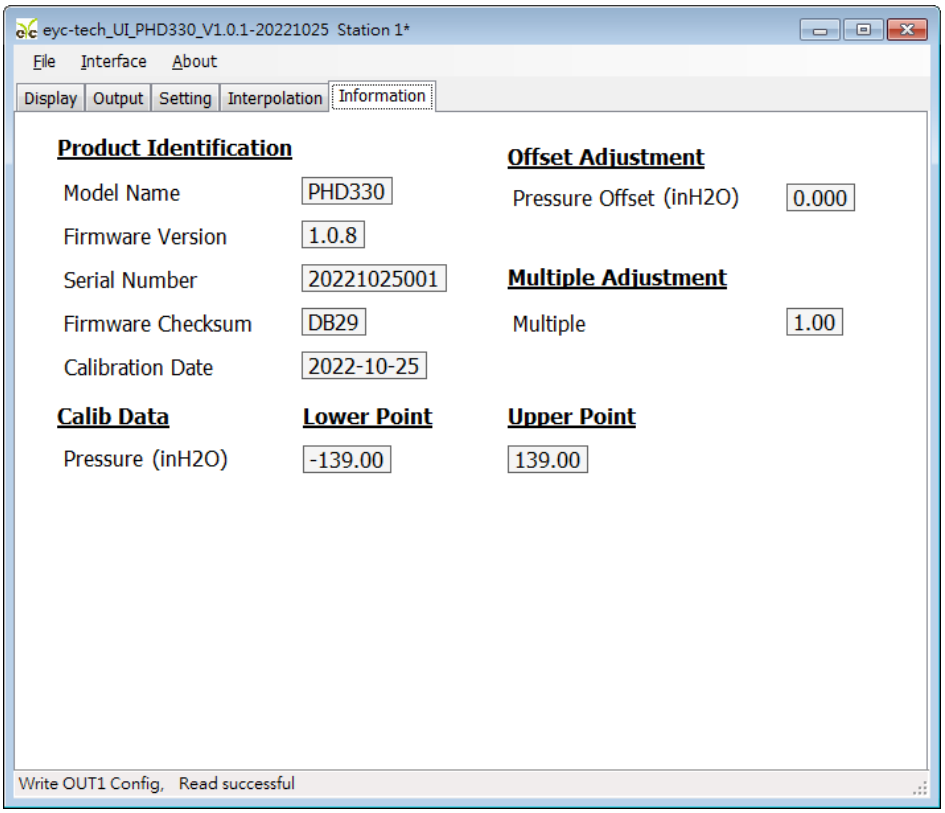
6. Unit setting, data display and data logging

   i. Pressure unit: mbar, Pa, hPa, kPa, mmH2O, mmWS, inH2O, mmHg

   ii. Export file: *.CSV



7. Transmitter information


eyc-tech_UI_PHD330_V1.0.1-20221025 Station 1*
File
Interface
About
Display
Output
Setting
Interpolation
Information
Product Identification
Model Name
PHD330
Firmware Version
1.0.8
Serial Number
20221025001
Firmware Checksum
DB29
Calibration Date
2022-10-25
Offset Adjustment
Pressure Offset (inH2O)
0.000
Multiple Adjustment
Multiple
1.00
Calib Data
Lower Point
Upper Point
Pressure (inH2O)
-139.00
139.00
Write OUT1 Config, Read successful

eyc-tech Measuring Specialist

enhance your capability with sensor technology

Air flow | Humidity | Dew point | Differential pressure | Liquid flow

Temp. | Pressure | Level | Air quality | Signal meter

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