Operation Manual

eYc PMD330

Differential Pressure Transmitter (Indoor)

Contents

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.

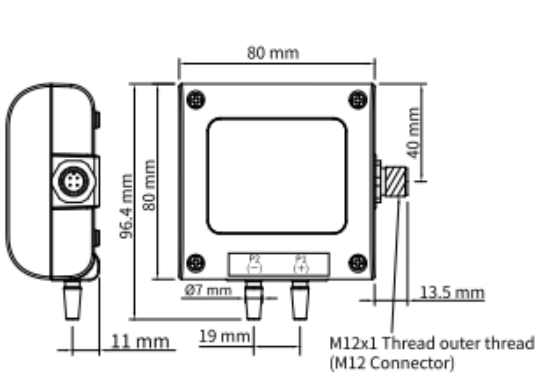
Do not use this product in a situation where human life may be affected.

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

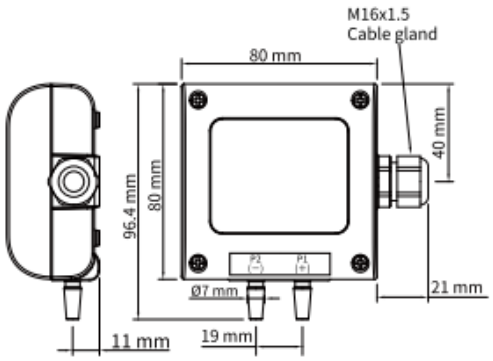
Warning!

- 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.

Dimension

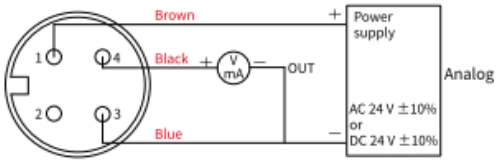


Indoor — M type

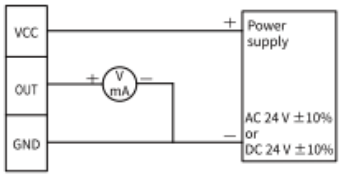


Indoor — N type

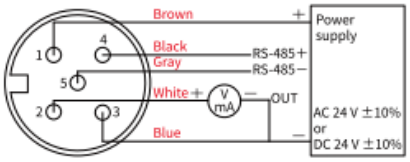
Connection Diagram



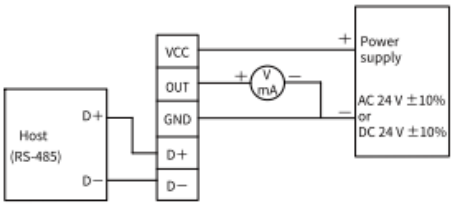
4P M12 Connector + Analog



3P Terminal, analog



5P M12 Connector + RS-485



5P Terminal, analog + RS-485

DIP Switch

【Function】

1.DIP switch active / Deactivate
2.The type for analog output
3~4.Switch measuring range
5.Zero switch
6.Linear / Square root, output switching
7.Filtering On / Off

DIP Switch Active / Deactivate

The function of DIP Switch_2 ... 7 only be effective while setting the DIP switch_1 as "On".

The transmitter setting is factory default or by software if DIP switch_1 as "Off".

O: On, X: Off

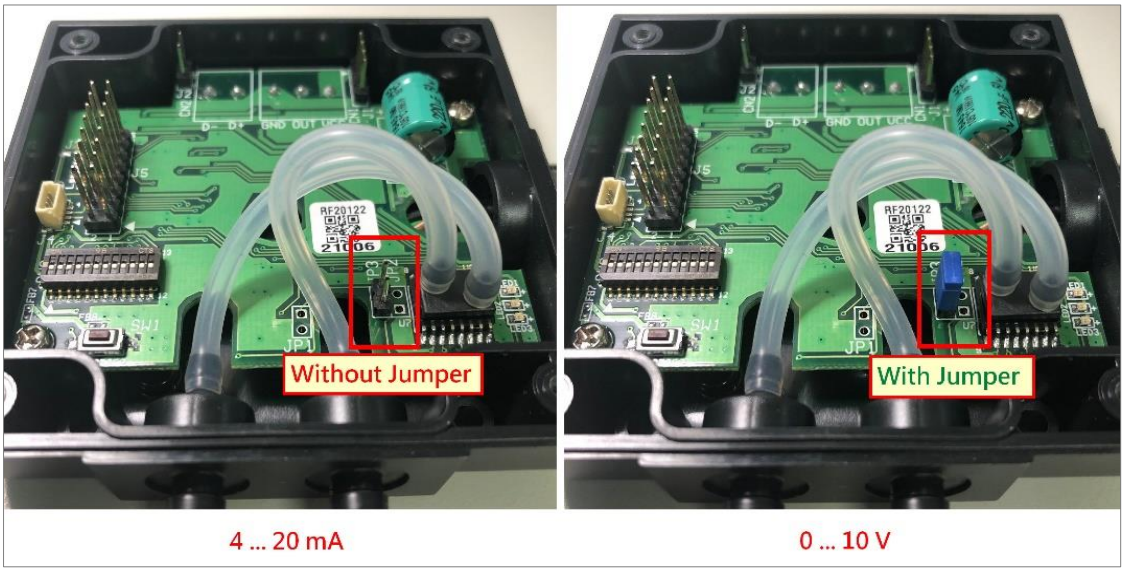
DIP switch	Switch_1
Deactivate	X
Active	O

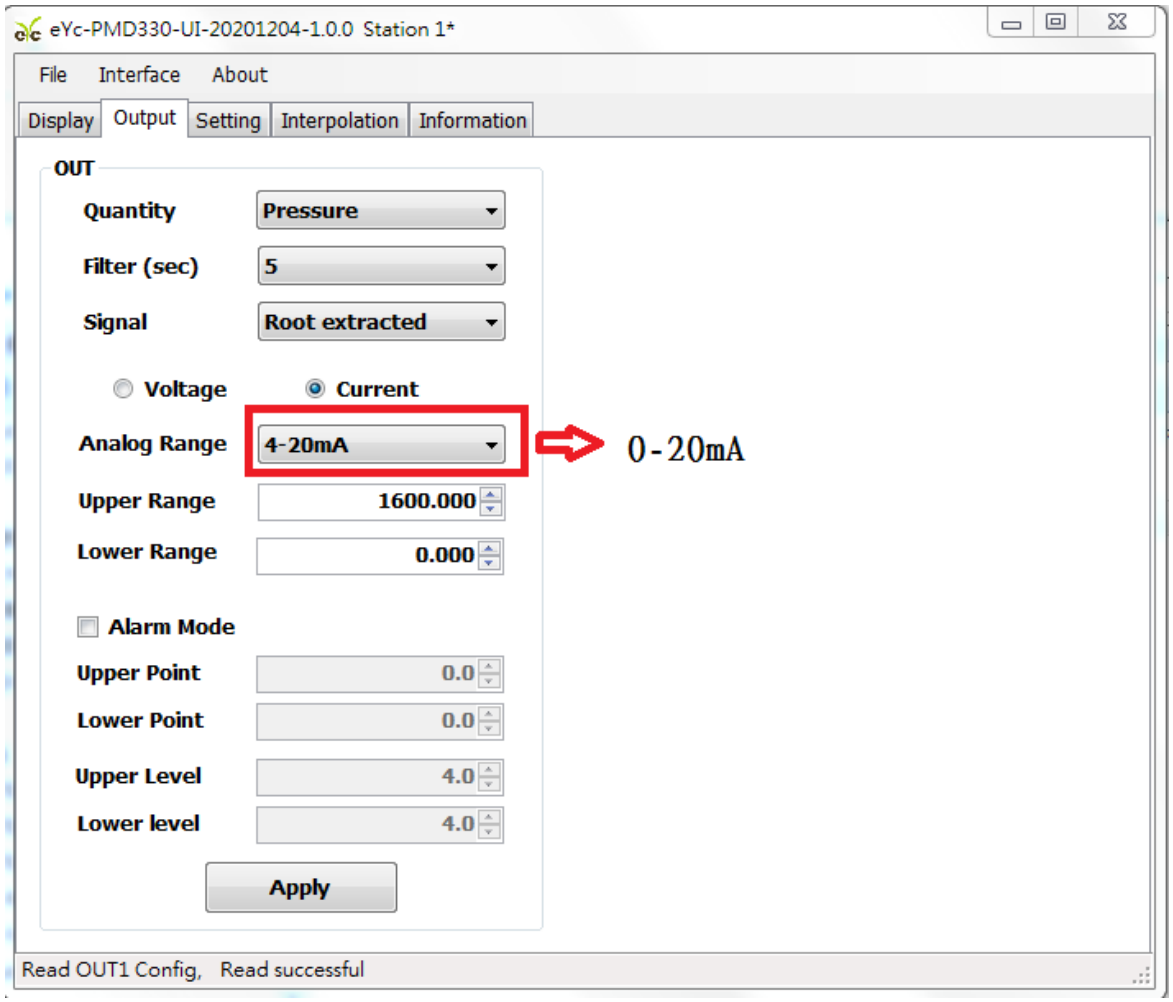
Analog Output setting

4 ... 20 mA or 0 ... 10 V for analog output, tower with Jumper

O: On, X: Off

Output	Switch_2
4 ... 20 mA	X
0 ... 10 V	O





* If you change the output to 0 ... 10 V, the range setting of UI should also be changed to 0 ... 20 mA.

Maximum Measuring value setting

According to the selected measuring range, three fixed values could be selected by DIP switch.

One flexible measuring range support by software setting as Switch_3 and Switch_4 both On. In this setting, the Central range setting for Switch_5 will be ignored and the measuring range is setting as factory default or user software.

O: On, X: Off

Switch	3		4		3		4	
	X		X		O		X	
Unit\Range	10	20	30	40	10	20	30	40
Pa	50	300	1000	5000	100	500	1600	7500
mbar	0.5	3	10	50	1	5	16	75
hPa	0.5	3	10	50	1	5	16	75
kPa	0.05	0.3	1	5	0.1	0.5	1.6	7.5
mmH_2O	5	30	100	500	10	50	160	750
mmWS	5	30	100	500	10	50	160	750
inH_2O	0.2	1.2	4	20	0.4	2	6.4	30
mmHg	0.375	2.25	7.5	37.5	0.75	3.75	12	56.25

O: On, X: Off

Switch	3		4		3		4	
	X		O		O		O	
Unit\Range	10	20	30	40	10	20	30	40
Pa	250	500	2500	10000	default or software setting			
mbar	2.5	5	25	100	default or software setting			
hPa	2.5	5	25	100	default or software setting			
kPa	0.25	0.5	2.5	10	default or software setting			
mmH_2O	25	50	250	1000	default or software setting			
mmWS	25	50	250	1000	default or software setting			
inH_2O	1	2	10	40	default or software setting			
mmHg	1.875	3.75	18.75	75	default or software setting			

Central range setting

According maximum measuring value setting of Switch_3, 4 and unit setting of user software, the central range sets the Bidirectional or unidirectional of measuring.

Example: the maximum measuring value is 100 and the unit setting is Pa.

Switch_5 Off : -100/ 100 Pa

Switch_5 On : 0 / 100 Pa r

O: On, X: Off

Range	Switch_5
Range: -100 ... +100%	X
Range: 0 ... +100%	O

Note: If Switch_3, 4 both On, then Central range setting will be ignored

Square Root Extracted setting

Root extraction is benefit for air velocity application. Measure the air velocity in the application with a reference instrument and work out the average velocity. LCD shown the √ mark on left-low side.

The following formula can be used for converting a linear 4 ... 20 mA current loop signal to a square root extraction type:

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

The formula for 0 ... 10 V to a square root extraction type:

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

O: On, X: Off

Status\No.	Switch_6
Linear	X
Square Root Extracted	O

Filter

Analog output filter for UI setting second or disable.

O: On, X: Off

Status\No.	Switch_7
Filter off (0)	X
UI setting	O

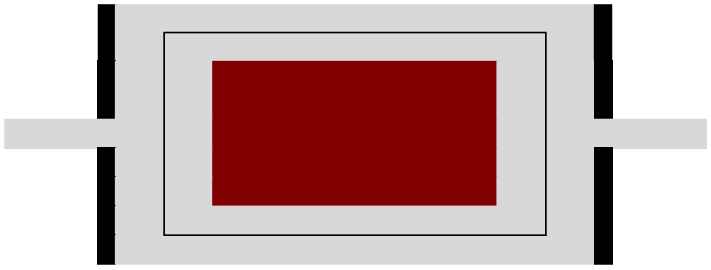
Button

AUTOZERO

This button allows user to set the current pressure to "AUTOZERO", it is required to press the button about 3 seconds, and user can see LED1 will turn on. After release this button, user will observe the LED flashing and the zero function has active.

Factory default

This button also allows user to restore factory default setting, it is required to press the button about 5 seconds, user can see LED1 will turn on then off. After release this button, user will observe the LED flashing and the factory default has restored.



RS-485 and Modbus

PMD330 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

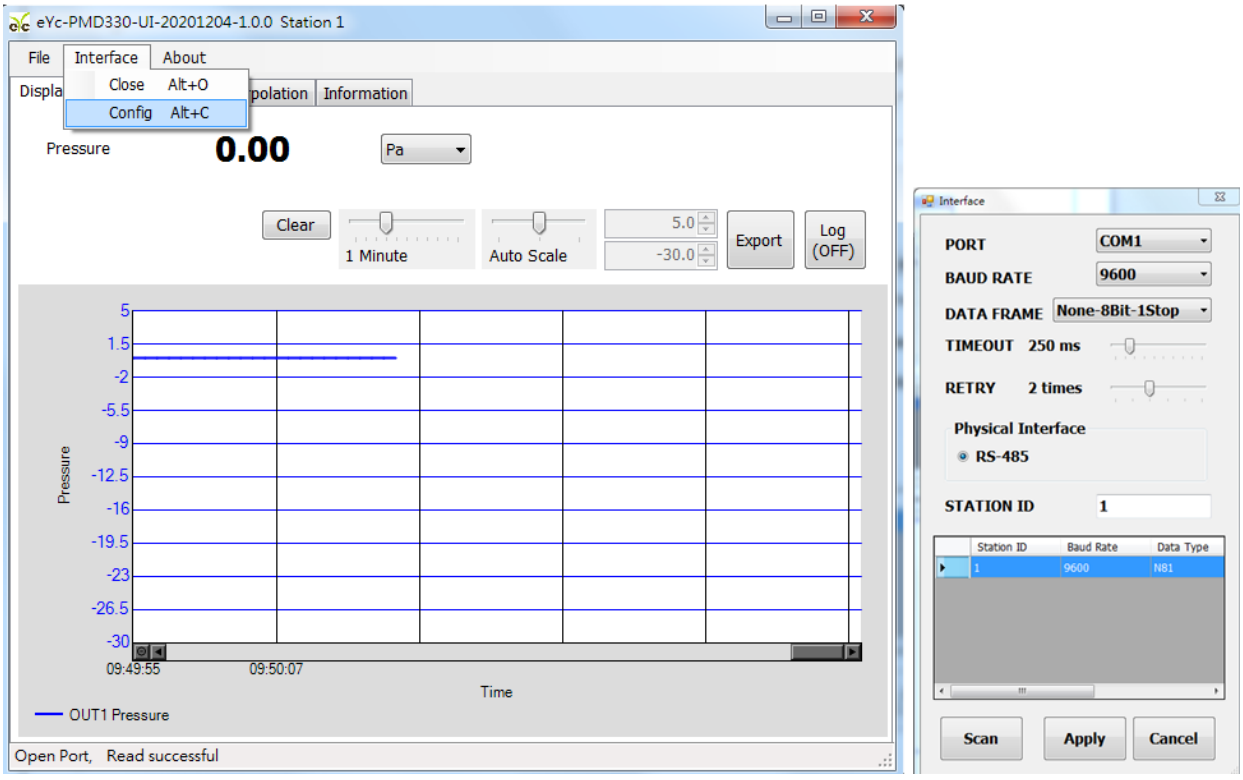
Technical Data

- 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

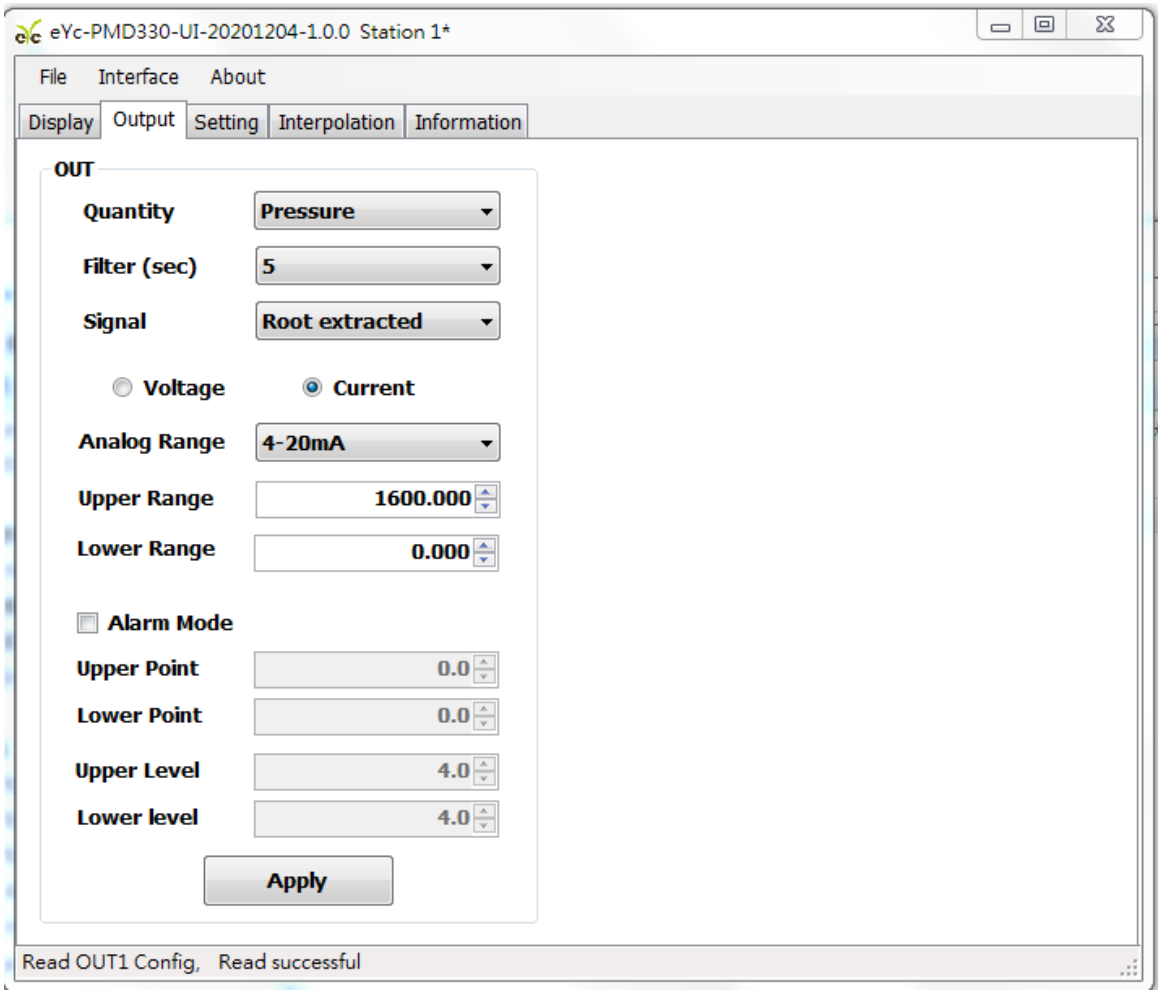
User Software

1. Hardware connection: Connect the PMD330 to PC by USB to RS-485 converter.
2. Check the COM port number from Computer Management

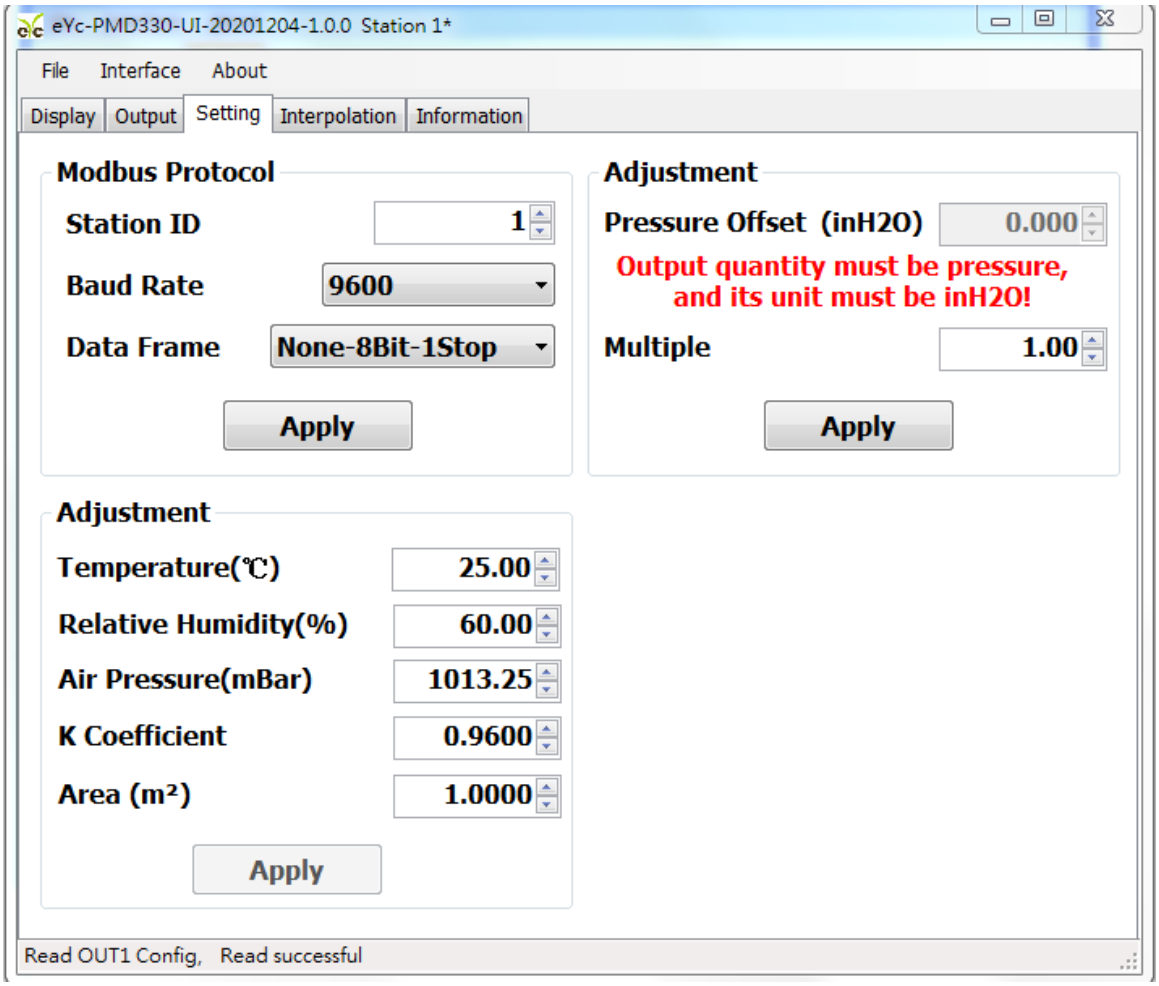
3. Open the PMD33_UI, go to function "Interface", click item "Config" and then setting COM port, BAUD rate and data format, pressed "Scan" bottom for scan devices and "Apply" for connection.



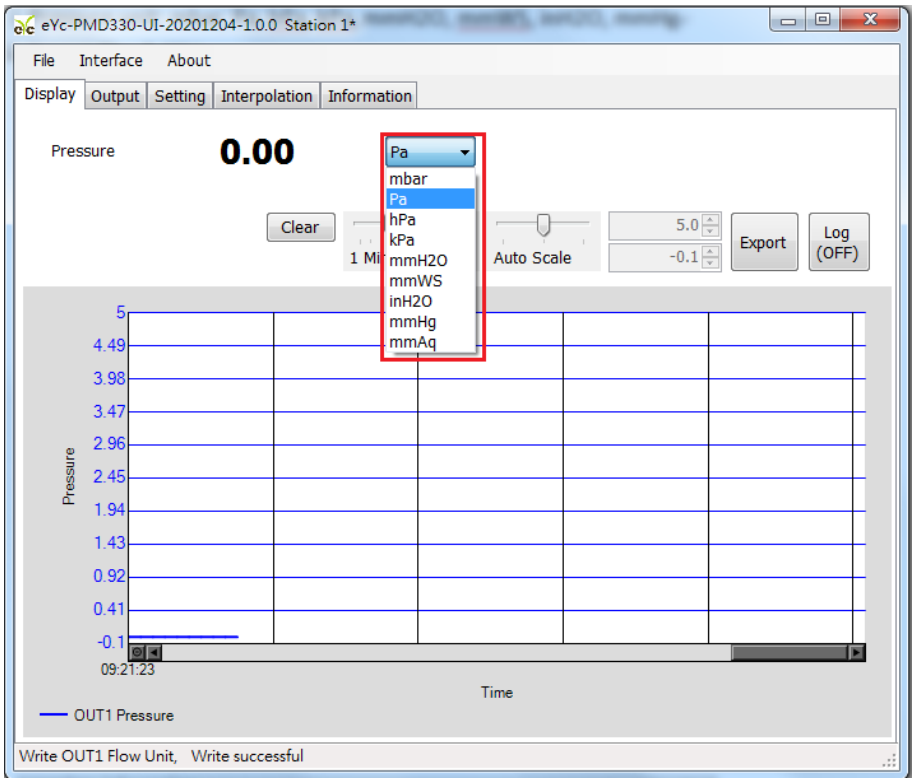
4. Setting on Analog Output
   i. Quantity: Pressure
   ii. Filter: 0, 5, 10, 20, 25 seconds
   iii. Signal: Linear / Square root extraction
      - LCD shown the √ mark on left-low side and red led of LDEP flash slowly while the square root extracted function has active.
   iv. Analog type: 4 ... 20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



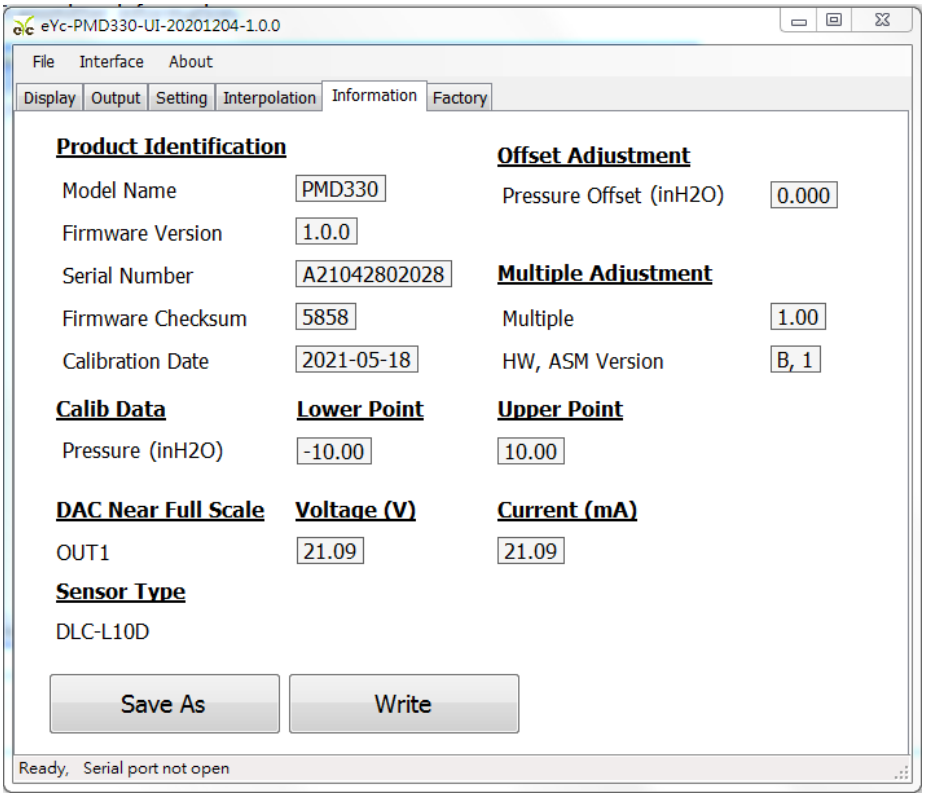
5. Setting on RS-485 and offset adjustment
   i. Station ID: 1~247
   ii. Baud Rate: 9600 / 19200 / 38400 / 57600 / 115200
   iii. Data Frame: None-8Bit-1Stop / None-8Bit-2Stop / Even-8Bit-1Stop / Even-8Bit-2Stop / Odd-8Bit-1Stop / Odd-8Bit-2Stop /
   iv. Pressure Offset adjustment, unit available in inH2O only
   v. Multiple on measuring value, from 0.01 to 100



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



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