Operation Manual

eyc-tech PMM06-D

Differential Pressure Transmitter

Contents

I. 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.

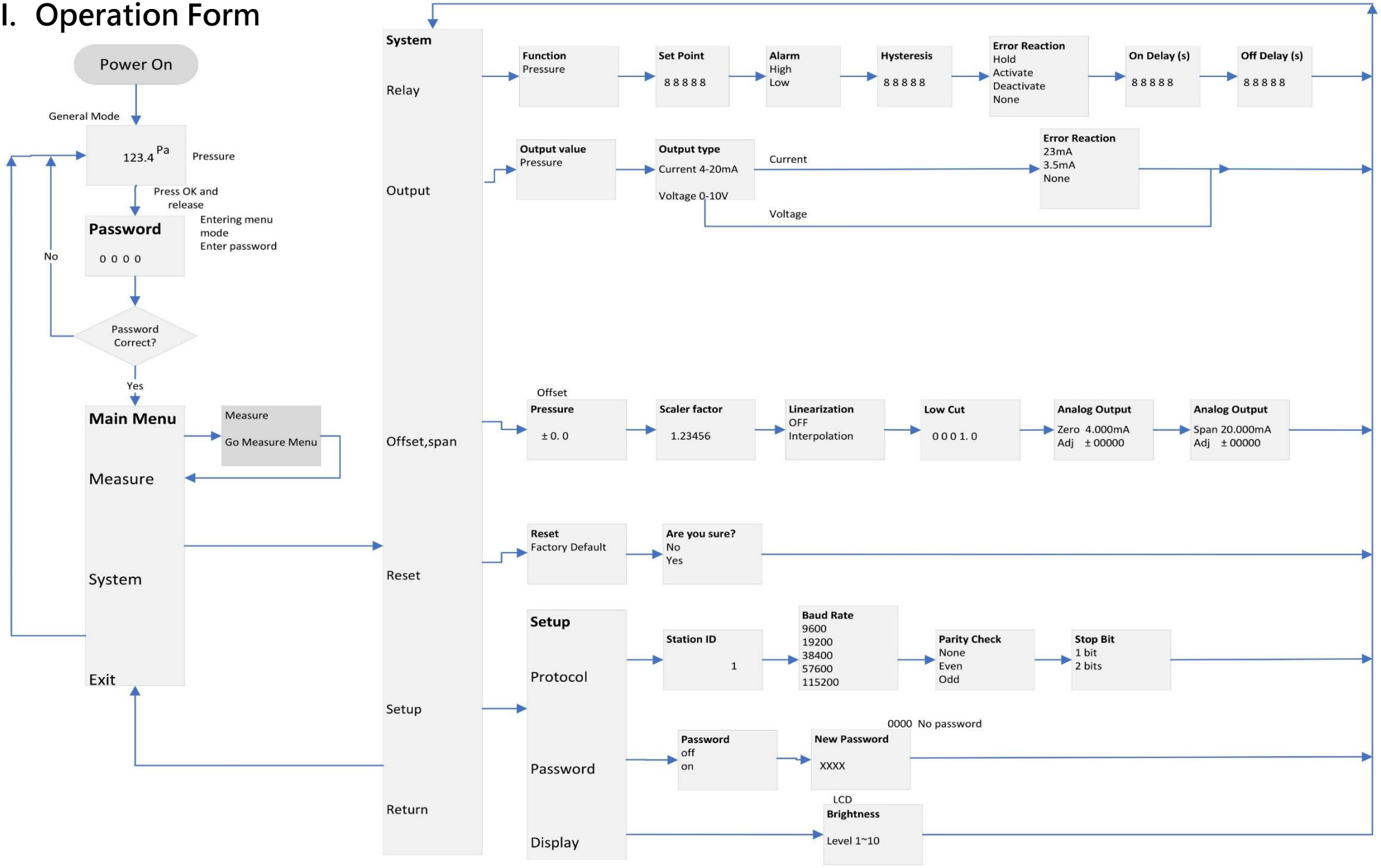
Do not use this product in a situation where human life may be affected.

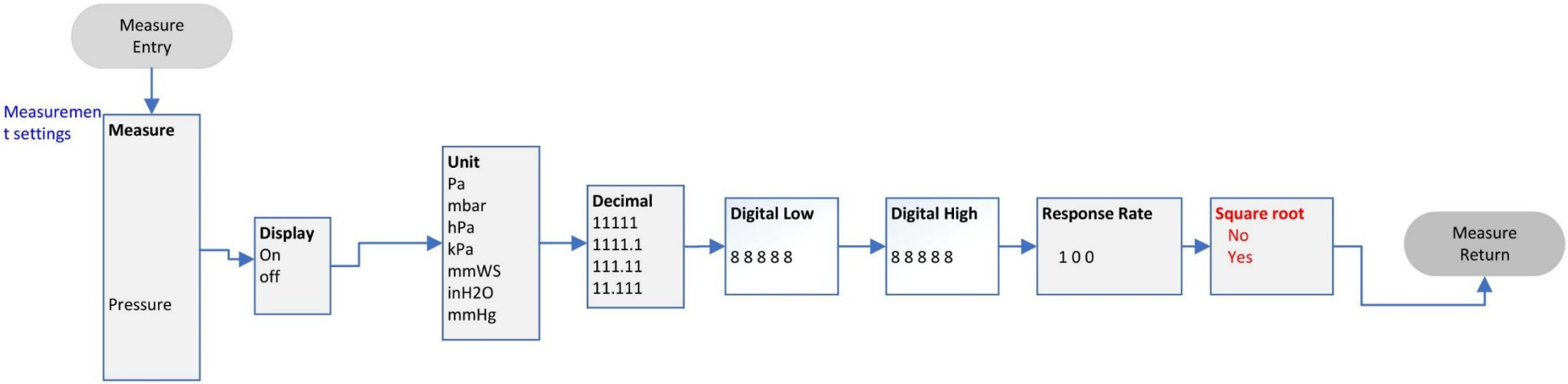
eyc-tech will not bear any responsibility for the results produced by the operators！

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.

II. Operation Form

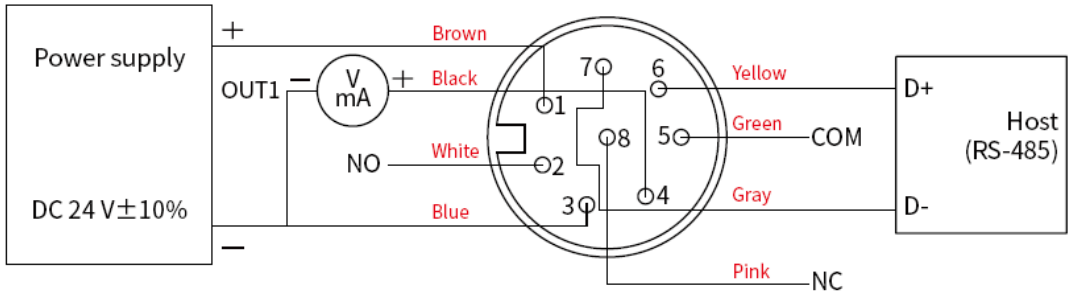



Measure Entry
Measuremen t settings
Measure
Pressure
Display
On
off
Unit
Pa
mbar
hPa
kPa
mmWS
inH2O
mmHg
Decimal
11111
1111.1
111.11
11.111
Digital Low
88888
Digital High
88888
Response Rate
100
Square root
No
Yes
Measure Return

※Key Pad Operation Mode

Button Instruction	Operation Mode	
	Normal Mode	Menu Mode
Press UP once	Reserved	increase number or option once
Press OK once	Go Menu Mode	submiit the selecion,go on next menu or complete the setting and then return to the nomel mode
Press DOWN once	Reserved	decrease number or option once,shift cursor if numerical menu
Hold UP	Reserved	increase number or option faster
Hold OK 5 seconds	AUTO Zero	Return to previous menu,or leave menu mode
Hold DOWN	Reserved	decrease number or option faster

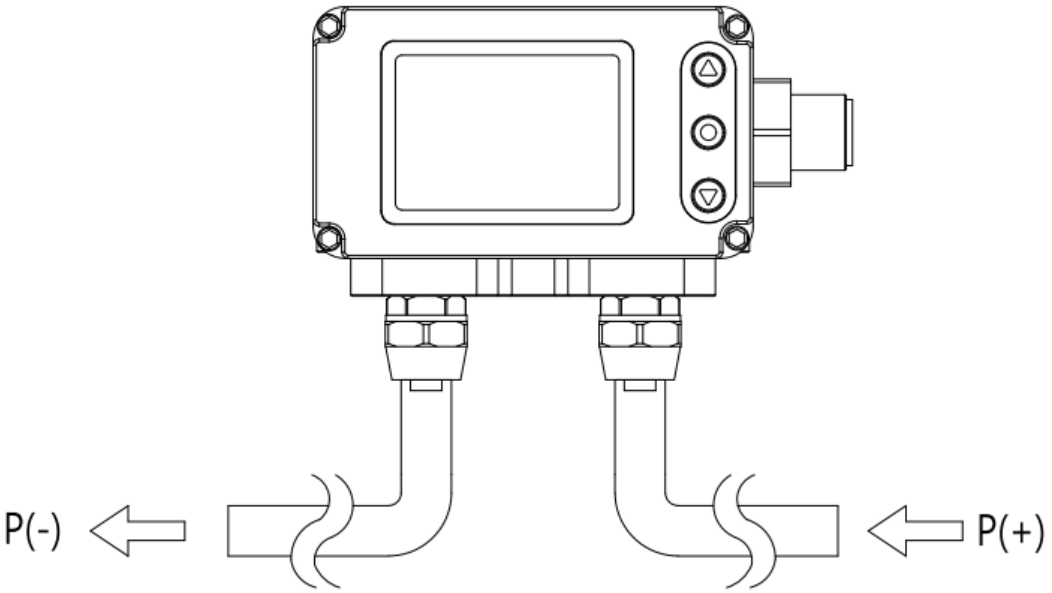
III. Connection Diagram



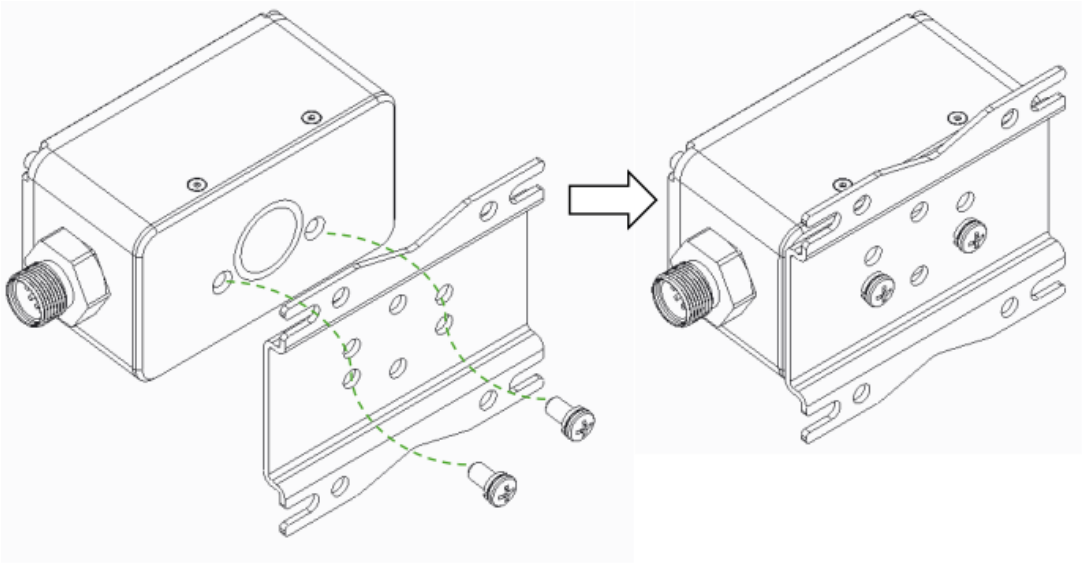
*Please make sure the product and the device which connect with RS-485 are on common ground, avoid damaged product.

IV. Installation

(1). Positive and negative pressure direction indication installation diagram



(2). Accessory installation diagram



V. RS-485 and Modbus

FDM06-L integrates a RS-485 interface for digital communication as an option feature. Based on Modbus protocol makes the general convenience on PLC, HMI and PC connection. For Modbus protocol information please download the file from website. 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：

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

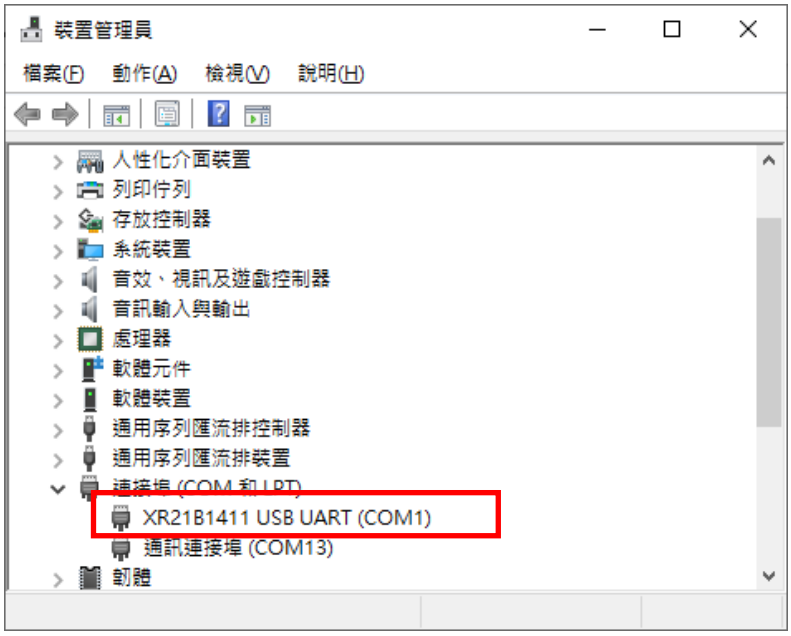
VI. Autozero

The middle button on the display panel allows the user to set the current differential pressure value to "AUTOZERO". The button needs to be pressed for 5 seconds to make the LCD display show Auto Zero. After releasing the button, the pressure is adjusted to "AUTOZERO". The user can observe whether the differential pressure value returns to zero and confirm whether the key operation is completed. Please make sure that the gas is completely still when operating this function.

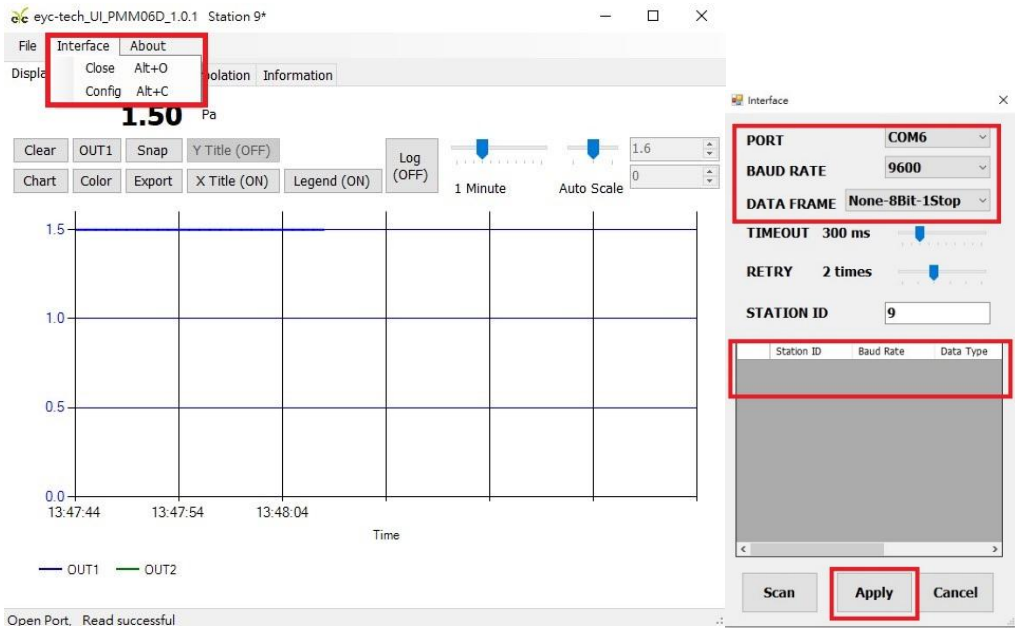
VII. Software and configuration step

User may download the configuration software on eyc-tech web site. Please decompress the application prior to execute it. Operating System requirements：above Windows 10. Hardware connection：Connect the FDM06-L to PC through USB to RS-485 or RS-232 to RS-485 converter

1. Check the COM port number from Device Manager in Computer Management. e.g. COM1 in illustration

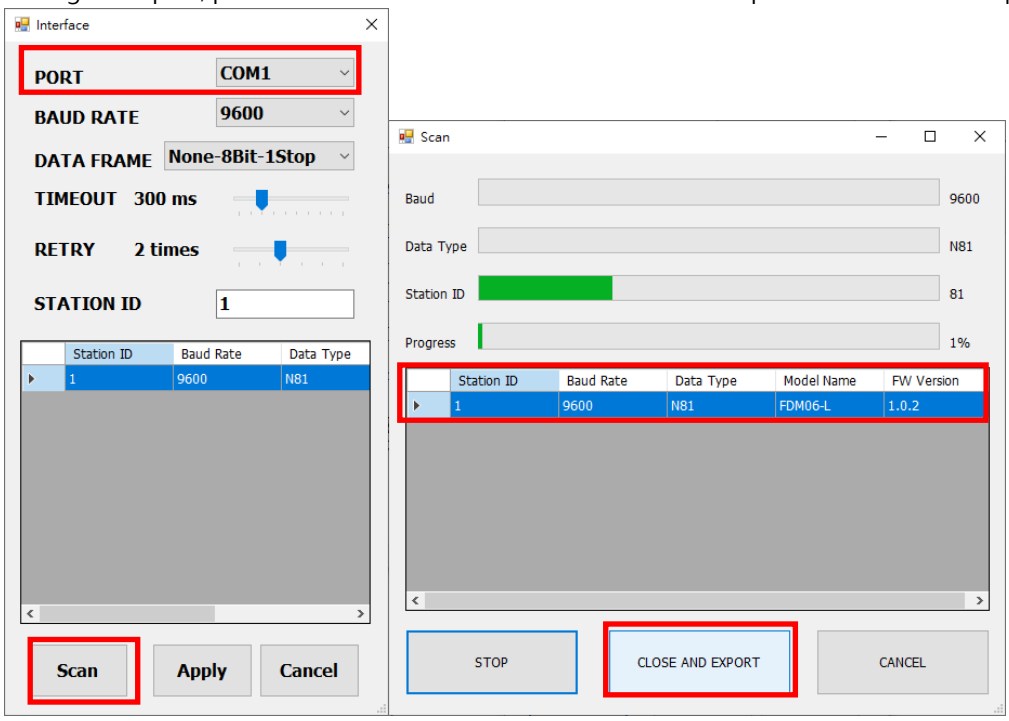


2. Open the PMM06-D UI, go to function " Interface " , click item " Config " and then setting COM port, BAUD rate, data format and Station ID, pressed " Apply " for connection



3. Scan RS-485 connection

Open the PMM06-D UI, go to function " Interface " , click item " Config " and then setting COM port, pressed " Scan " bottom for scan devices and pressed " Close and Export "



when the interested devices found.

Pick up the device that you want to connect to and then press "Apply" to go.

4. Analog Output & Relay Settings

In the group of Analog, Output tab. The output1 related setting could be found.

(1) Quantity：Output differential pressure

(2) Analog Type: Voltage or Current

(3) Bidirectional measurement function: When the fluid flows in the reverse direction, the output differential pressure is allowed to be displayed or output as a negative number, otherwise the output is cut off and regarded as 0 differential pressure

(4) Analog Range： 4 ... 20 mA (if output current) / 0 ... 10 V (if output voltage)

(5) Decimal Places：Up to 3 decimal places. Please note that the number of displayed digits is a fixed maximum of 5 digits, and the decimal digits need to occupy integer digits.

(6) Range for Display Upper

(7) Range for Display Lower

(8) Quantity：Output differential pressure

(9) Alarm Level：Relay activate mode, activate at increasing signal (High) or activate at decreasing signal (Low)

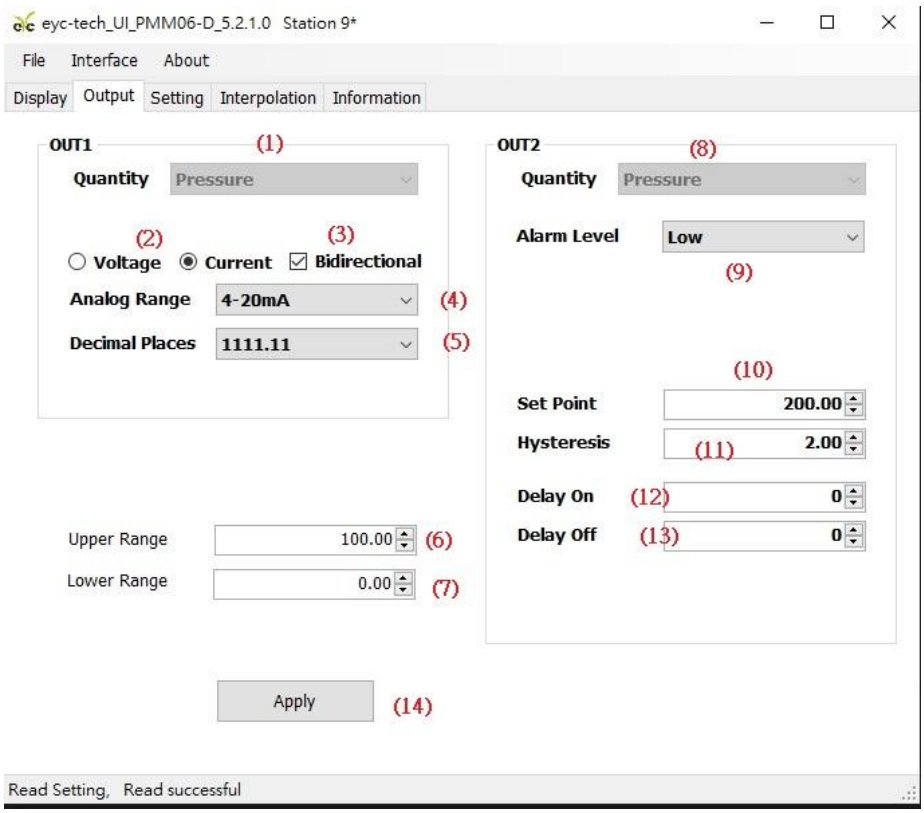
(10) Set Point：Activation Set Point

(11) Hysteresis：Activation Hysteresis Gap

(12) Delay On：Relay Activate Delay Time in second

(13) Delay Off：Relay Deactivate Delay Time in second

(14) Apply: Write the setting value to the device. If this button is not clicked, the changes will be discarded.


eyc-tech_UI_PMM06-D_5.2.1.0 Station 9*
File
Interface
About
Display
Output
Setting
Interpolation
Information
OUT1
(1)
Quantity
Pressure
(2)
Voltage
(3)
Current
Bidirectional
Analog Range
4-20mA
(4)
Decimal Places
1111.11
(5)
Upper Range
100.00
(6)
Lower Range
0.00
(7)
OUT2
(8)
Quantity
Pressure
Alarm Level
Low
(9)
(10)
Set Point
200.00
Hysteresis
(11)
2.00
Delay On
(12)
0
Delay Off
(13)
0
Apply
(14)
Read Setting, Read successful

5. Offset adjustment and RS-485 Setup

There are 2 groups in setting tab. The description of each item as below.

※Offset adjustment：

(1) Differential pressure (quantity) offset

(2) Differential pressure (quantity) Low Cut Off Level

(3) scaler factor

(4) Write offset correction setting

(5) Read the offset correction setting

※Modbus Protocol：

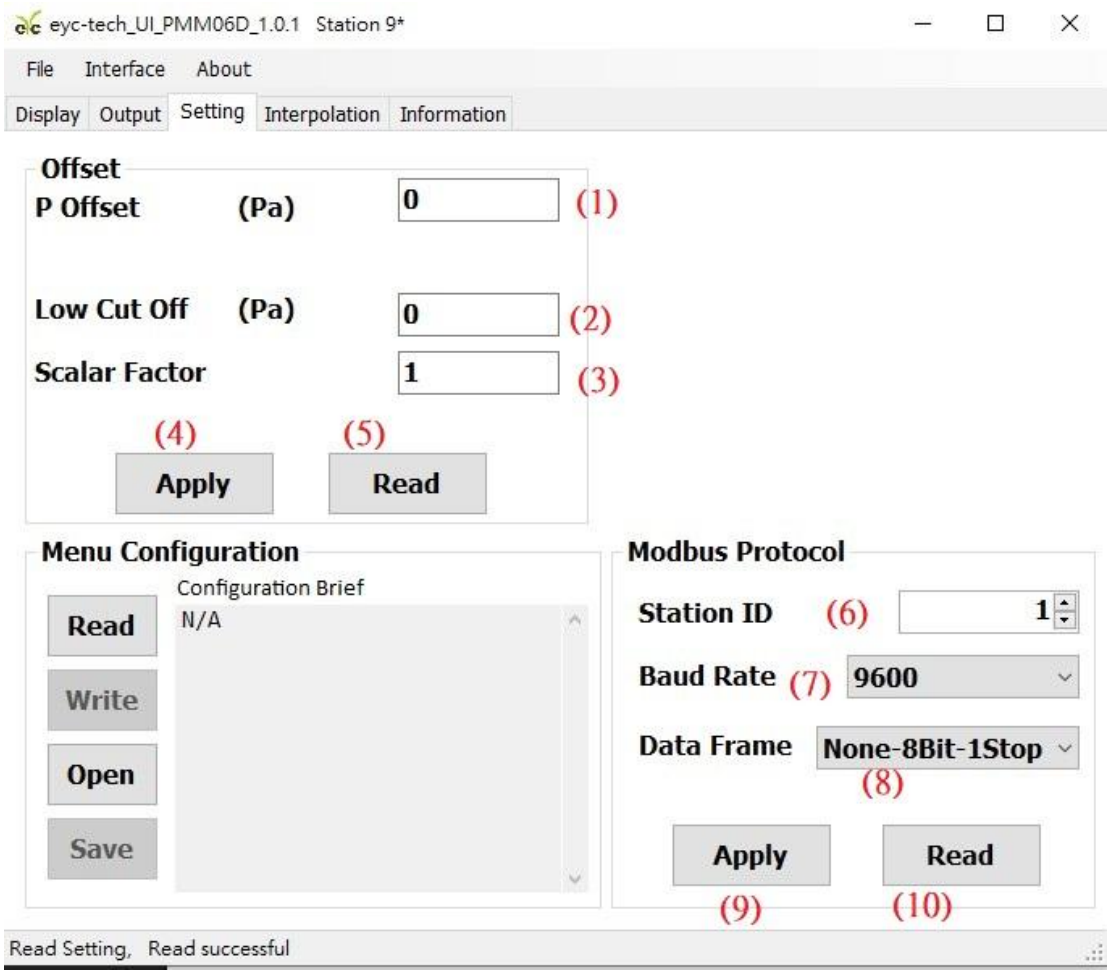
(6) Station ID

(7) Baud Rate

(8) Data Frame, the combination of parity check and stop bit

(9) Write Modbus settings

(10) Read Modbus settings


eyc-tech_UI_PMM06D_1.0.1 Station 9*
File
Interface
About
Display
Output
Setting
Interpolation
Information
Offset
P Offset (Pa)
0
(1)
Low Cut Off (Pa)
0
(2)
Scalar Factor
1
(3)
(4)
Apply
(5)
Read
Menu Configuration
Read
Write
Open
Save
Configuration Brief
N/A
Modbus Protocol
Station ID (6)
1
Baud Rate (7)
9600
Data Frame
None-8Bit-1Stop
(8)
Apply
Read
(9)
(10)
Read Setting, Read successful

6. Linear Interpolation

Click the Interpolation tab to specify linear interpolation points.

(1) interpolation table

(2) interpolation curve

(3) interpolation input column, device measures value (raw value)

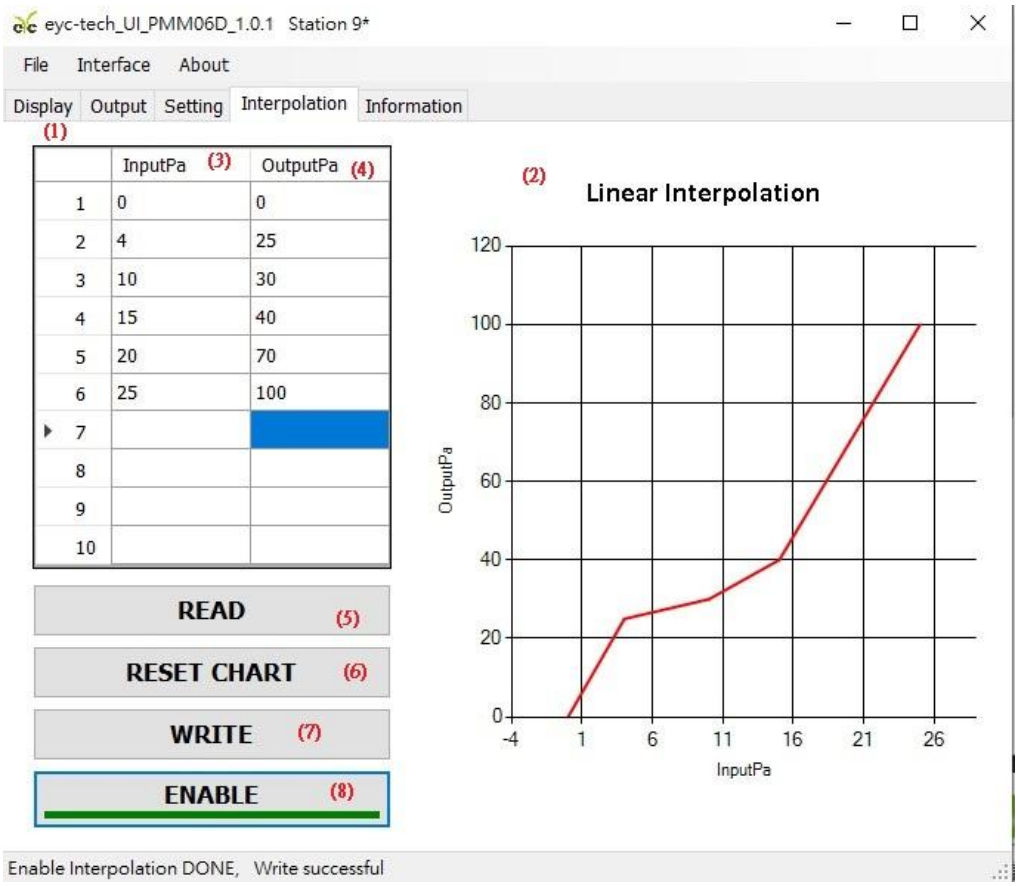
(4) interpolation output column, device output value (standard value or correction value)

(5) read the interpolation table of connected device

(6) Clear the interpolation table on configuration software. Note: this action will not modify the interpolation table of the device

(7) apply, the interpolation would be written in device

(8) enable, activate the interpolation calculation. When a green rectangle as shown below is displayed under the button, it means that interpolation is enabled,



6. Device Information

On the Information tab, obtain device information, including the following information:

(1) Serial Number of Device

(2) Model Name of Device

(3) Firmware Version of Device

(4) Supported Unit Conversion

(5) TS1 temperature correction point

(6) TS2 temperature correction point

(7) Analog Output Calibration points Voltage

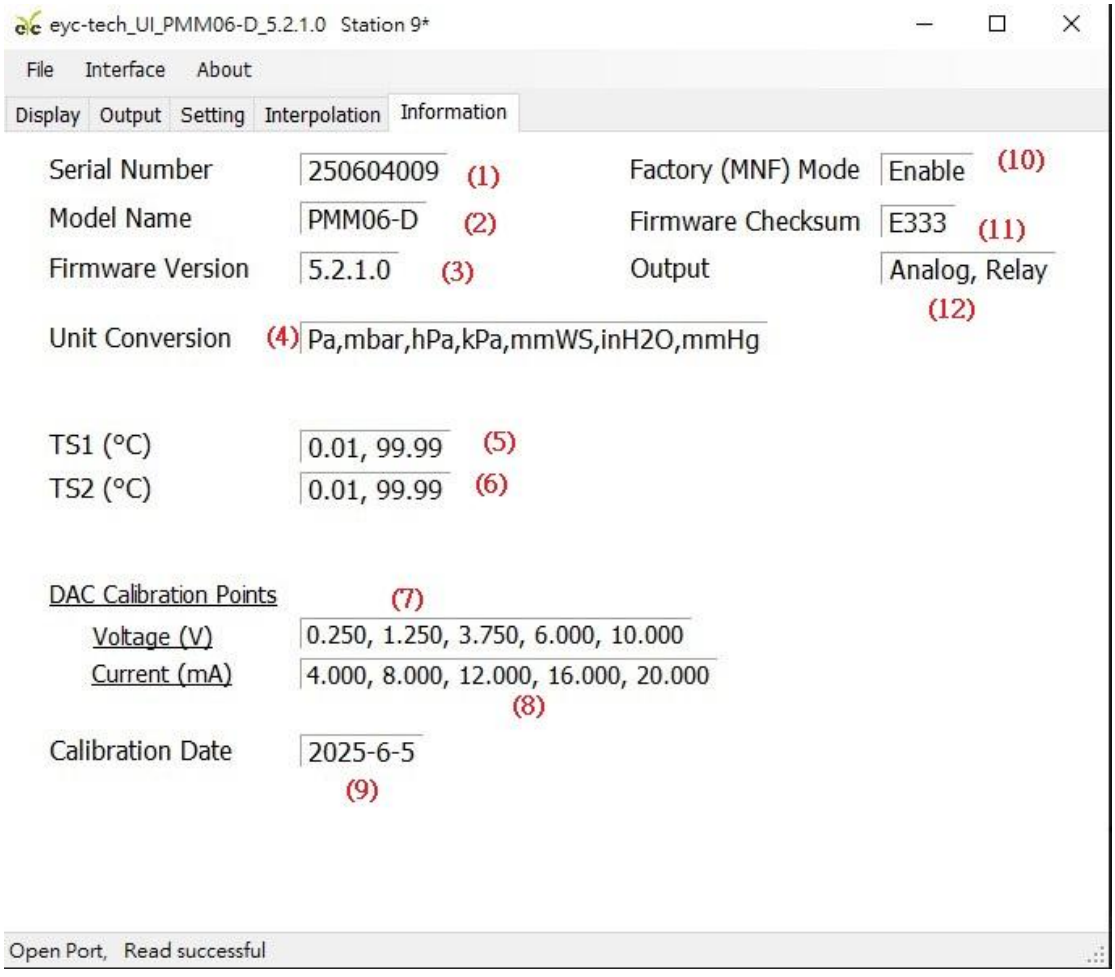
(8) Analog Output Calibration points Current

(9) Calibration Date

(10) Factory Mode Status, default Disable

(11) Firmware Checksum

(12) Output equipment, supports analog output and relay functions



7. **Data display and logging**

On the Display tab, display the measurement data and log the data. The settings are as follows.

※button function description

Clear clear chart

Chart change chart drawing line style

OUT1 select the activate channel to be set color

Color set the activate channel line color

Snap capture drawing chart screen

Export export measurement data since the last "clear chart" or ui start up

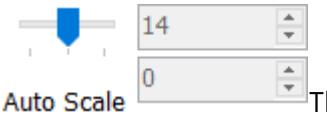
Y Title (ON) Y-axis label On/Off

X Title (ON) X-axis label On/Off

Legend (ON) chart legend On/Off

Log (OFF) data log function On/Off

1 Minute The X-axis scale adjustment



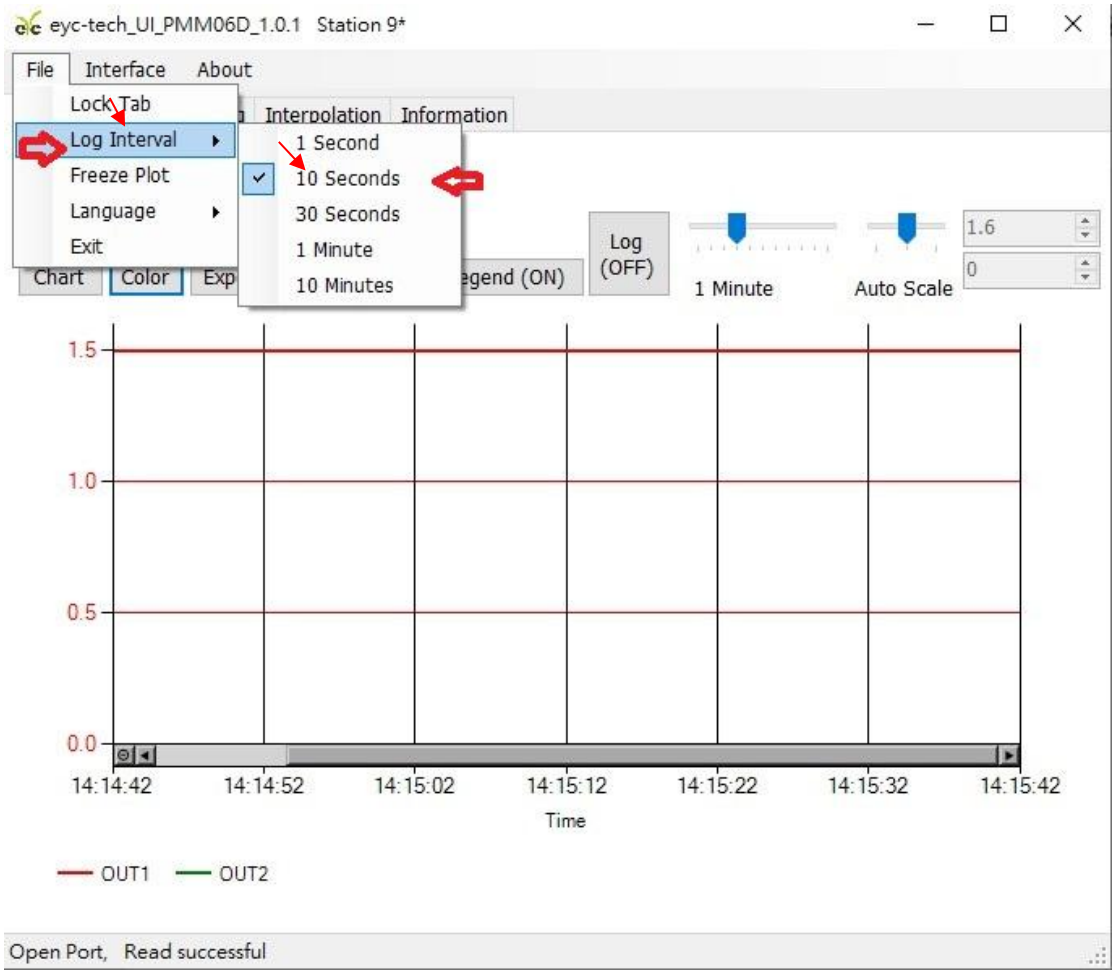
The Y-axis scale mode

※Set recording time interval

a. File > Log Interval

b. Select recording interval

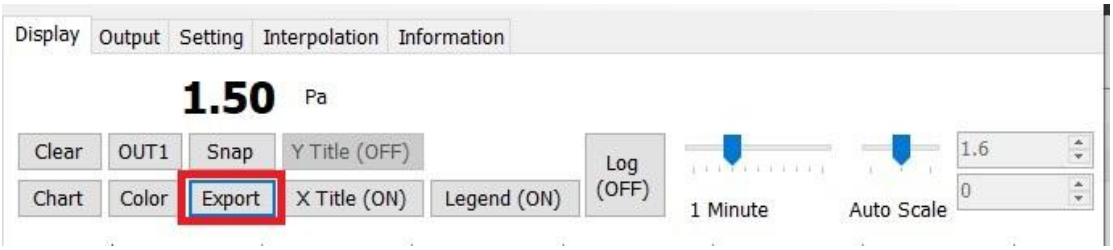
Differential Pressure Transmitter



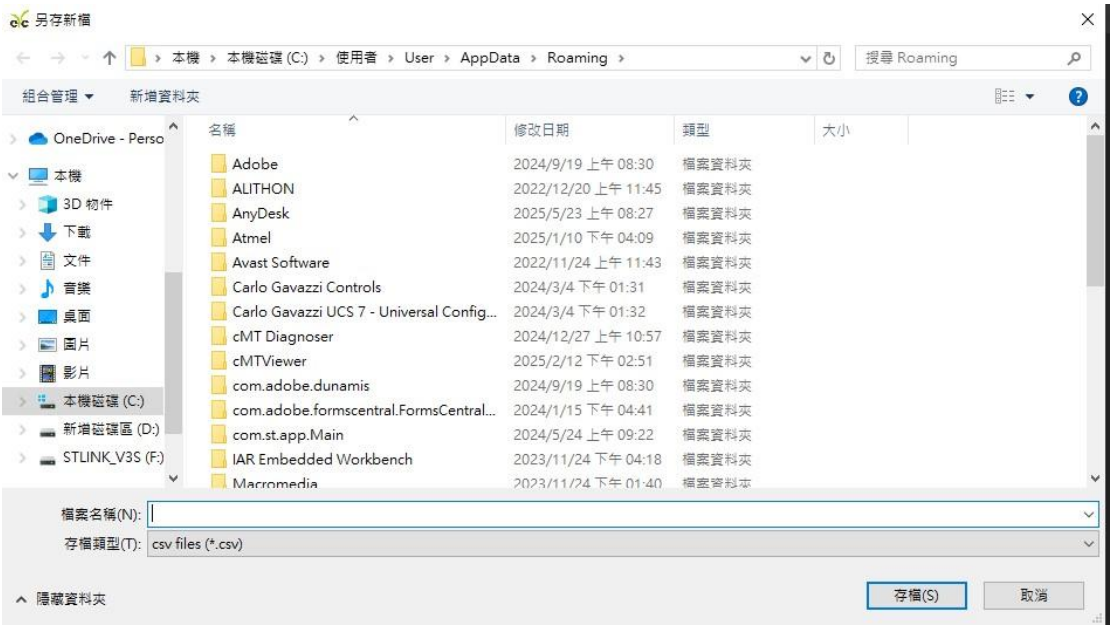
※Export/recording measurement

1. export measurement data since ui start up or the last "clear chart"

1-1. clock Display > Export



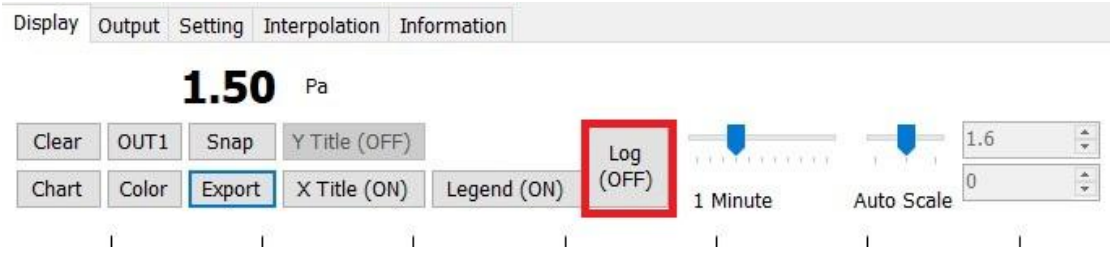
1-2. Specify the file path and file name > Save



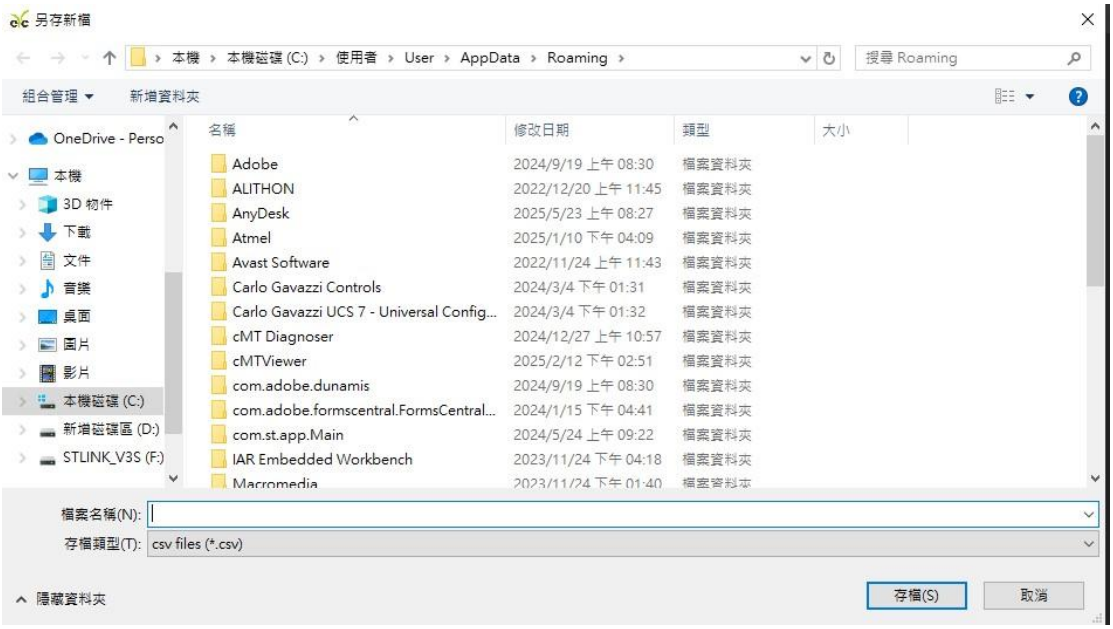
Note: If the specified file already exists, the data will be overwritten.

2. Record measurement data: record data since the Log function is turn on

2-1. Clock Display > Log(OFF)

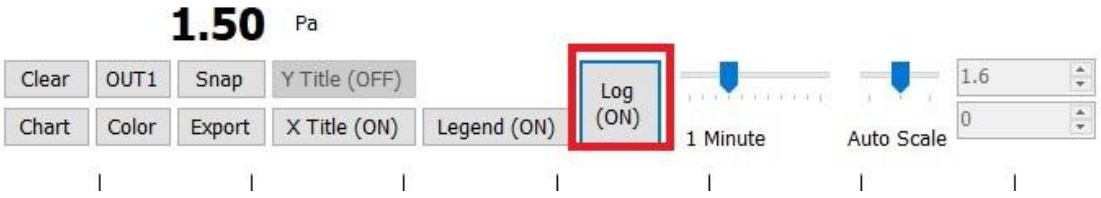


2-2. Specify the file path and file name > Save > Log(ON)



Note: If the specified file already exists, the data will be overwritten.

2-3. Finish recording measurement data: Click Log(ON) again. At this time, the button returns to displaying Log(OFF), and the recorded data file is stored in the specified file.



VIII. Inspection and maintenance

1. Maintenance

Since this product is inspected and calibrated for high accuracy at the factory before shipment, no calibration on the installation site is necessary when this product is installed

For inspection and maintenance follow the instructions below：

(a) Periodic inspection

Periodically inspect this product for its sensing accuracy, clean the sensor element and clean bypass channel (if L2 Overflow type). Set the period between inspections based on atmospheric dust and other contaminants in the installation environment

(b) Sensor maintenance

Do not damage sensor surface during maintenance process

(c) Troubleshooting

If any problem occurs during operation, refer to the table below for appropriate solutions

2. Troubleshooting：

Problem	Cleck items	Soluations
●No output ●Unstable output	●Disconnected wiring ●Loose wiring ●Power supply voltage ●Sensor damages	●Re-perform wiring ●Crew on terminal tightly or replace wires ●Clean up the bypass channel ●Replace the sensor
●Slow response to output ●Error in output	●Moisture / Condensation on the product ●Execute Autozero before measures ●Check installed location ●Check bypass channel ●Check dust and contamination on the sensor	●Remove the sensor cover and filter. Let the sensor unit dry naturally in a clean air environment ●Refer to the section 6. Autozero ●The straight length of pipe did not satisfy design specifications. Refer to the section 4. Installation ●Calibrate ●Replace the sensor

Differential Pressure Transmitter

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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