Operation Manual

eyc-tech FTC06

Temperature and Flow Transmitter



Contents

I. Security considerations.....2
II. Connection Diagram 3
III. RS-485 and Modbus 3
IV. Software and configuration step.....4
V. Inspection and maintenance 14

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.

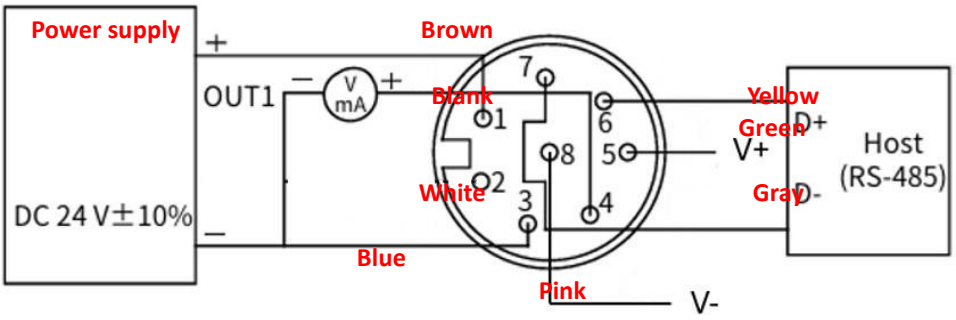
Do not use this product in a situation where human life may be affected.

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. Connection Diagram



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

III. RS-485 and Modbus

FTC06 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.

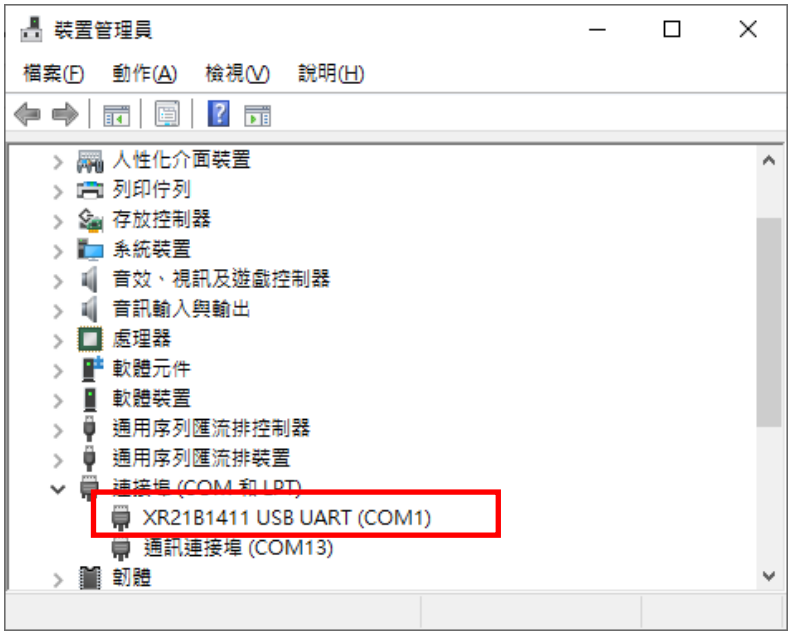
Technical Data：

(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

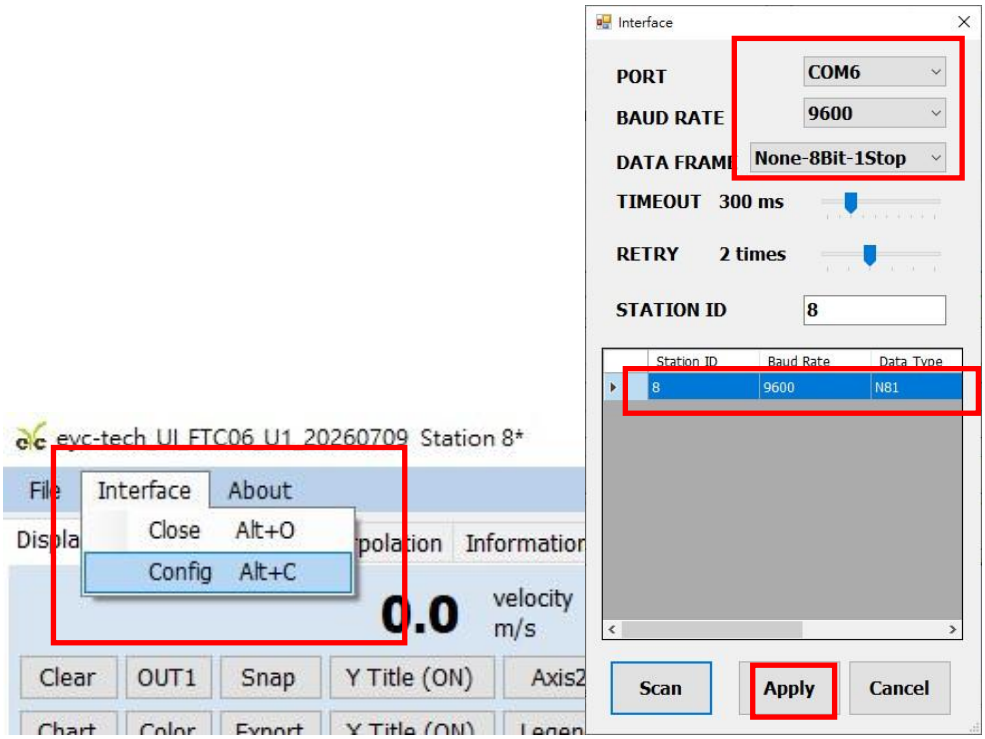
IV. Software and configuration step

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 FTC06 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**

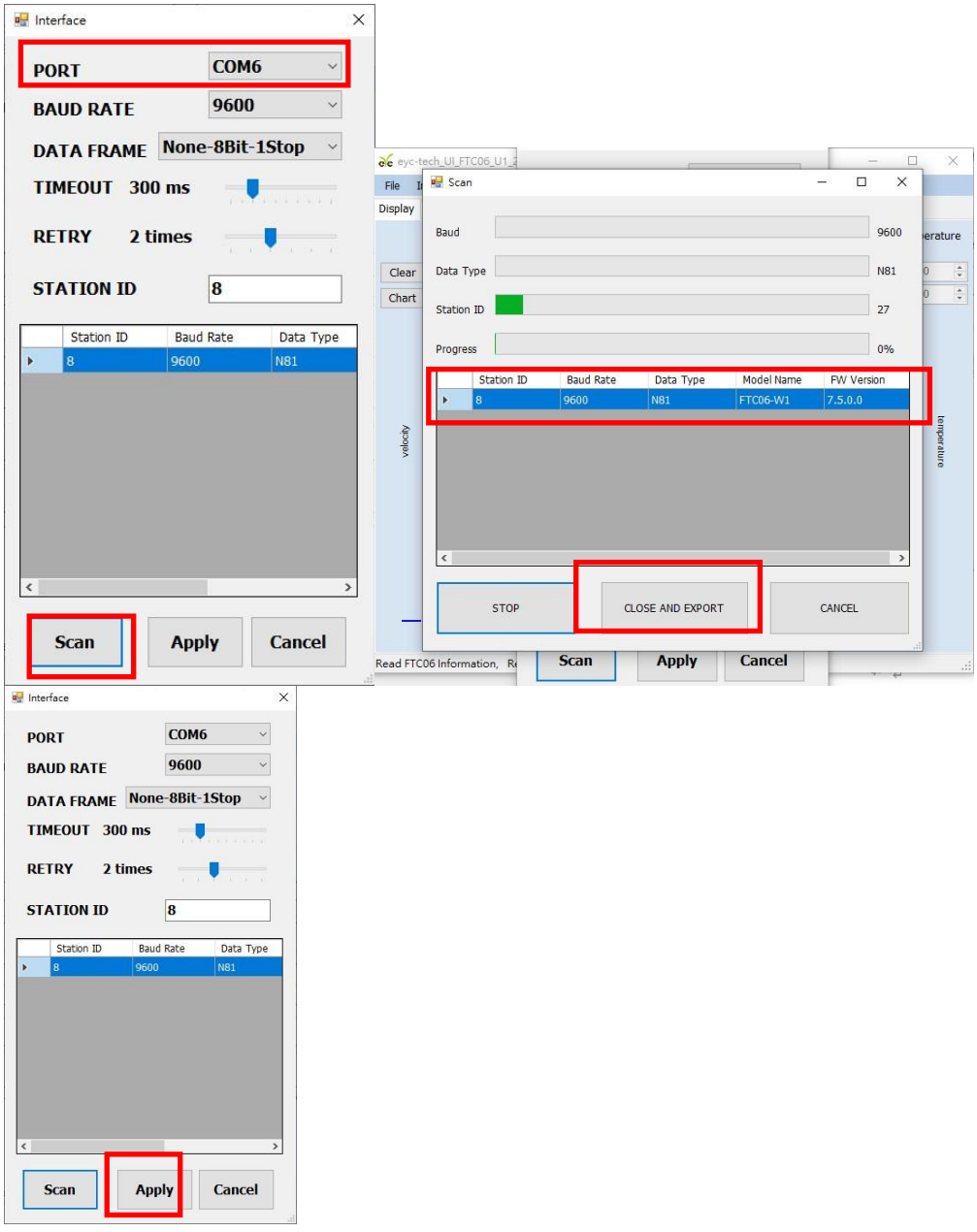


2. **Open the FTC06 UI, go to function " Interface " , click item " Config " and then setting COM port, BAUD rate, data format and Station ID, pressed " Apply " for connection**



3. Scan RS-485 connection

Open the FTC06 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 out1] / [NPN out2]

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

(1) Quantity：Output types

(2) Response Rate

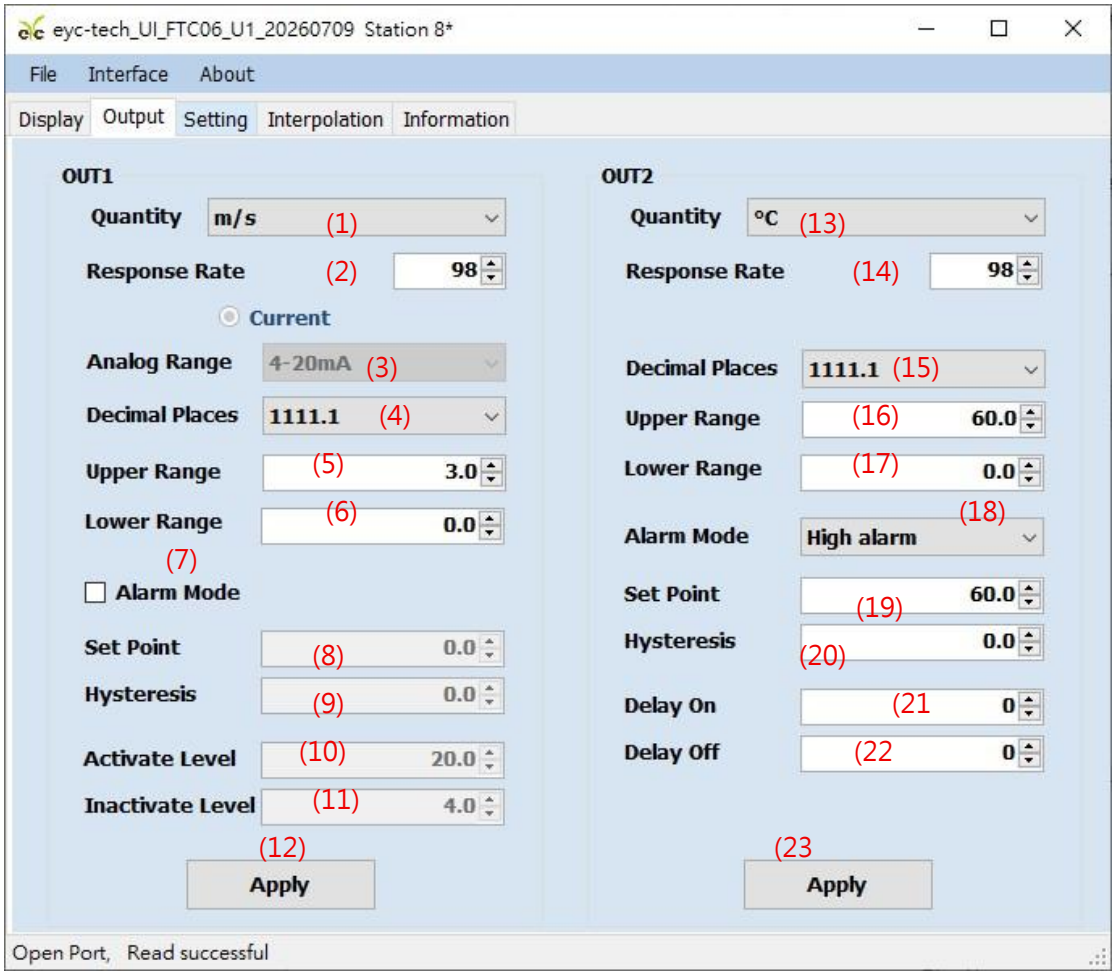
(3) Analog Range： 4 ... 20 mA (only)

(4) Decimal places

(5) Range for Display Upper
(6) Range for Display Lower
(7) Alarm Mode: Check the box if analog output pretends an alarm switch output
(8) Alarm Trigger Point: Upper
(9) Alarm Trigger Point: Lower
(10) Alarm Output Level: Activate Level
(11) Alarm Output Level: Inactivate Level
(12) Apply: Writes the settings to the device. Changes made will be discarded unless this button is pressed.

※The -NPN alarm output2 settings are as follows:

(13) Quantity：Output types
(14) Response Rate
(15) Alarm Level：NPN activate mode, activate at increasing signal (High) or activate at decreasing signal (Low)
(16) Range for Display Upper
(17) Range for Display Lower
(18) Alarm mode: High - Actuates when the set point is exceeded (uplink trigger) or Low - Actuates when the set point is fallen (downlink trigger).
(19) Alarm Trigger Point: Set Point
(20) Alarm Trigger Point: Hysteresis
(21) Alarm delay time：Delay time unit (seconds)
(22) Alarm extension time：Extend the time unit (seconds)
(23) Apply: Writes the settings to the device. Changes made will be discarded unless this button is pressed.



5. **Setting parameters include RS-485 configuration, flow rate/temperature correction offset adjustment, and pipe diameter setting.**

※ Modbus Protocol：

(1)Station ID

(2)Baud Rate

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

(4)Modbus Protocol settings write.

(5)Modbus Protocol settings for reading.

※ Flow rate/temperature correction offset adjustment:

(6) Flow rate offset correction

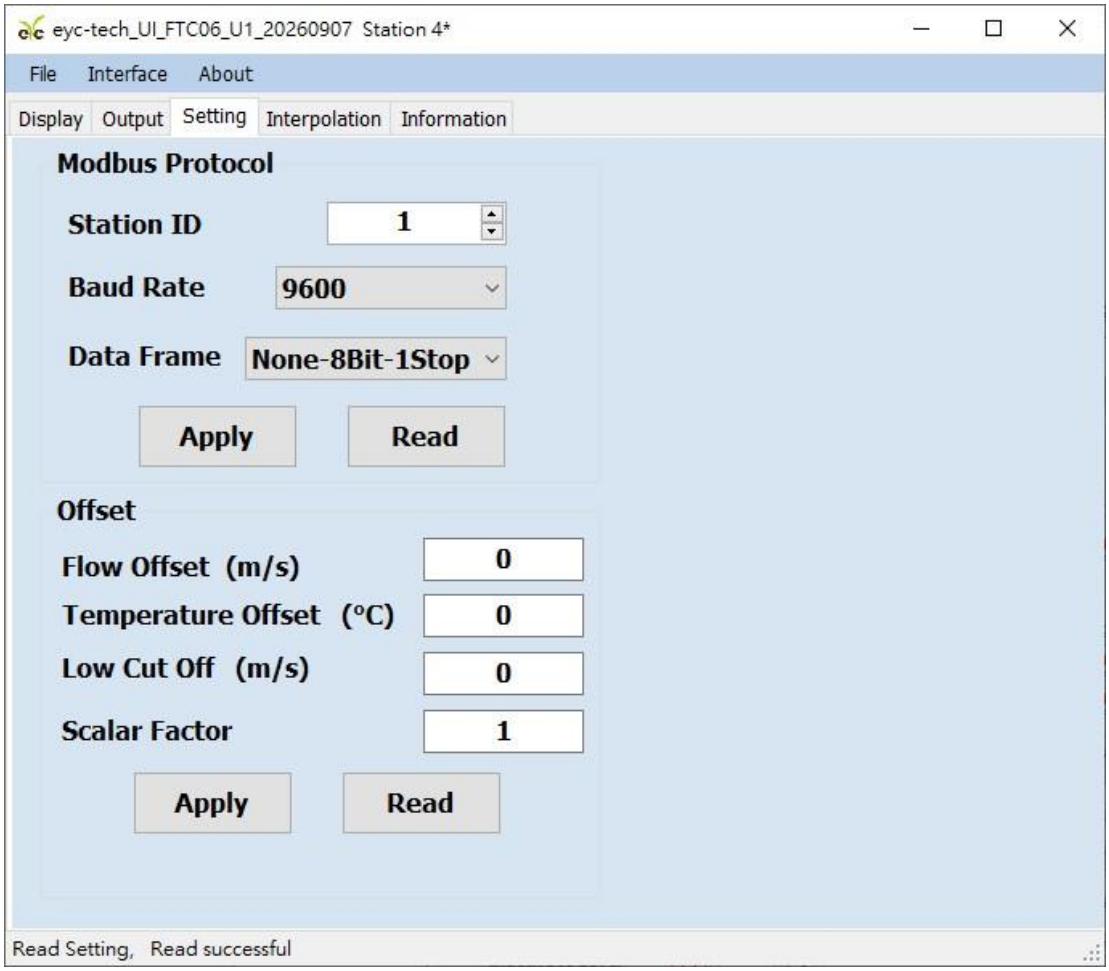
(7) Temperature offset correction

(8) Flow rate low point cutoff

(9) Flow rate k-value compensation

(10) Write correction offset setting

(11) Read correction offset setting



6. **Linear Correction.**

※ Select the Interpolation tab to correct linear interpolation points:

(1) Interpolation trend graph

(2) Interpolation table

(3) Interpolation input row, device measurement value (raw value)

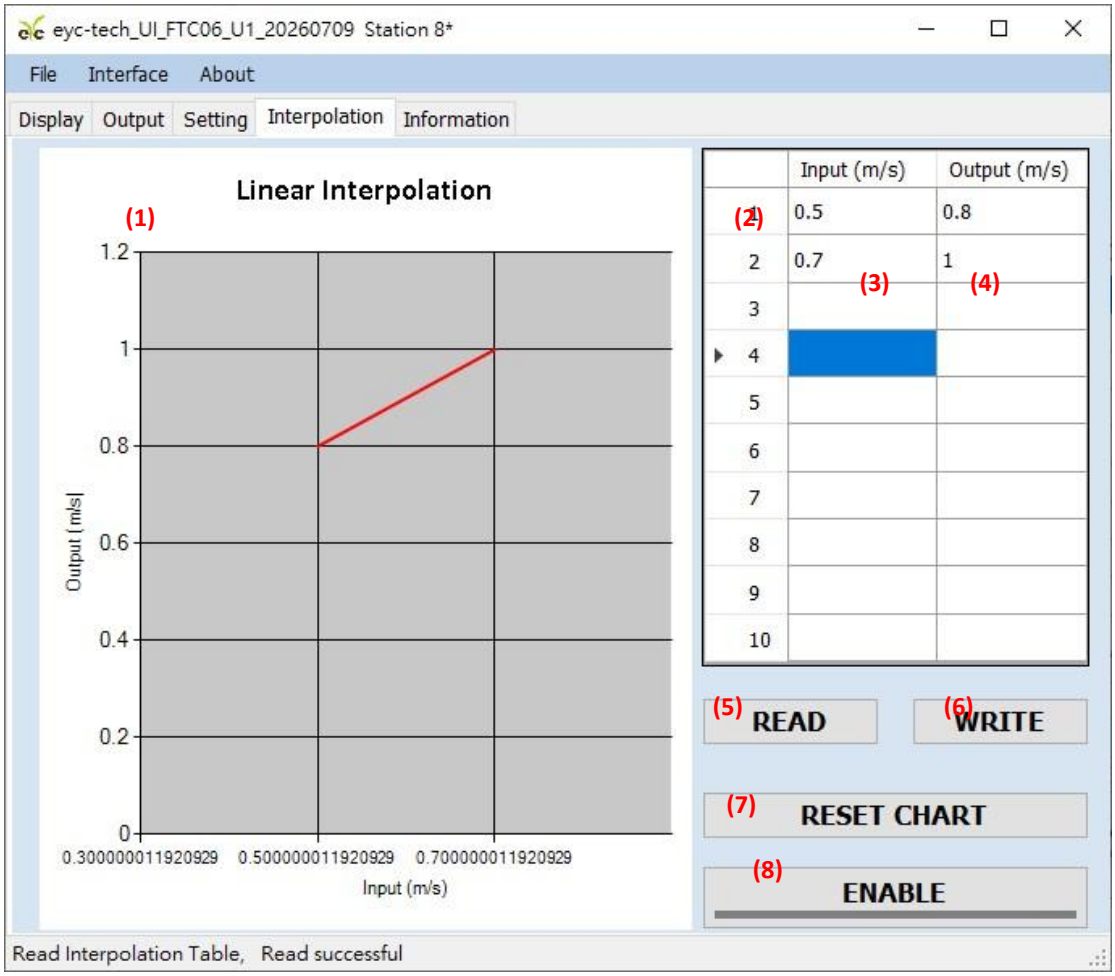
(4) Interpolation output row, device output value (standard value or correction value)

(5) Read device's interpolation table

(6) Apply, update the interpolation table

(7) Clear the interpolation settings of the planning software. Note: This action will not modify the device's interpolation table. Please select Apply to write the changes to the device.

(8) Linear interpolation function switch. When a green rectangle is displayed below the button as shown in the figure, interpolation is enabled; otherwise, the interpolation function is disabled.



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

Axis2 (ON) secondary Y-axis On/Off

Legend (ON) chart legend On/Off



data log function On/Off





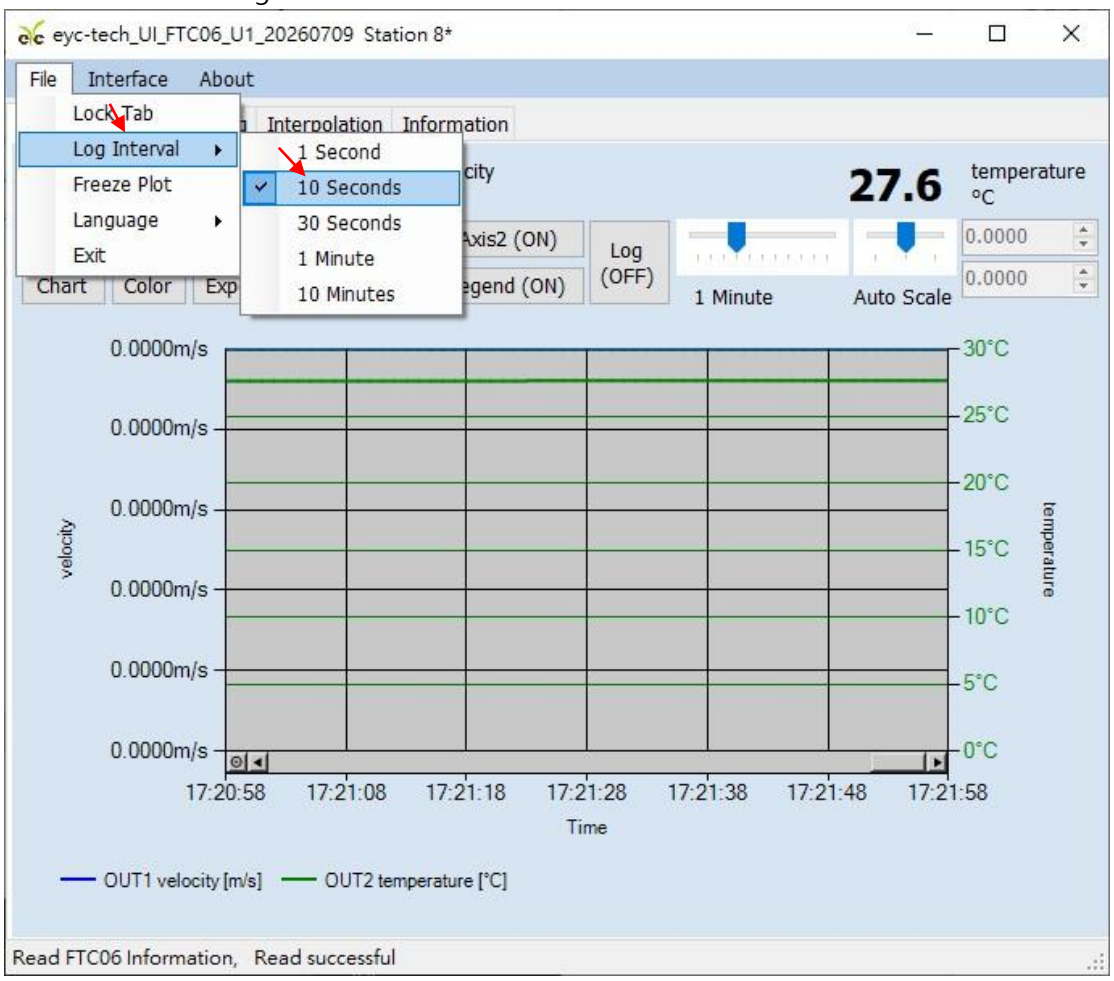
The X-axis scale adjustment

The Y-axis scale mode

※Set recording time interval

a. File > Log Interval

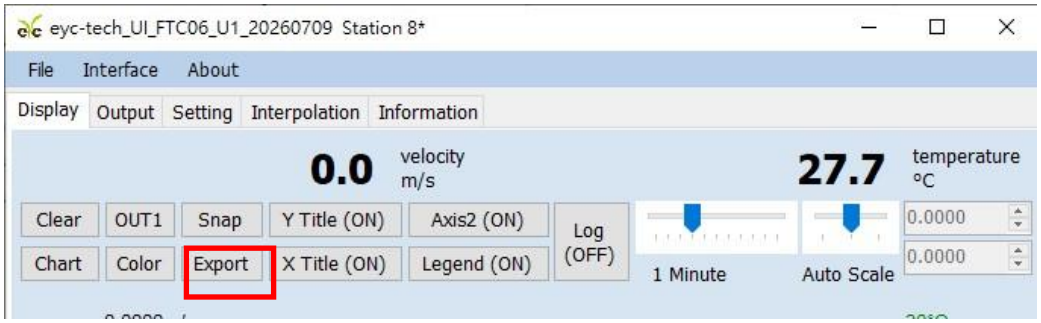
b. Select recording interval



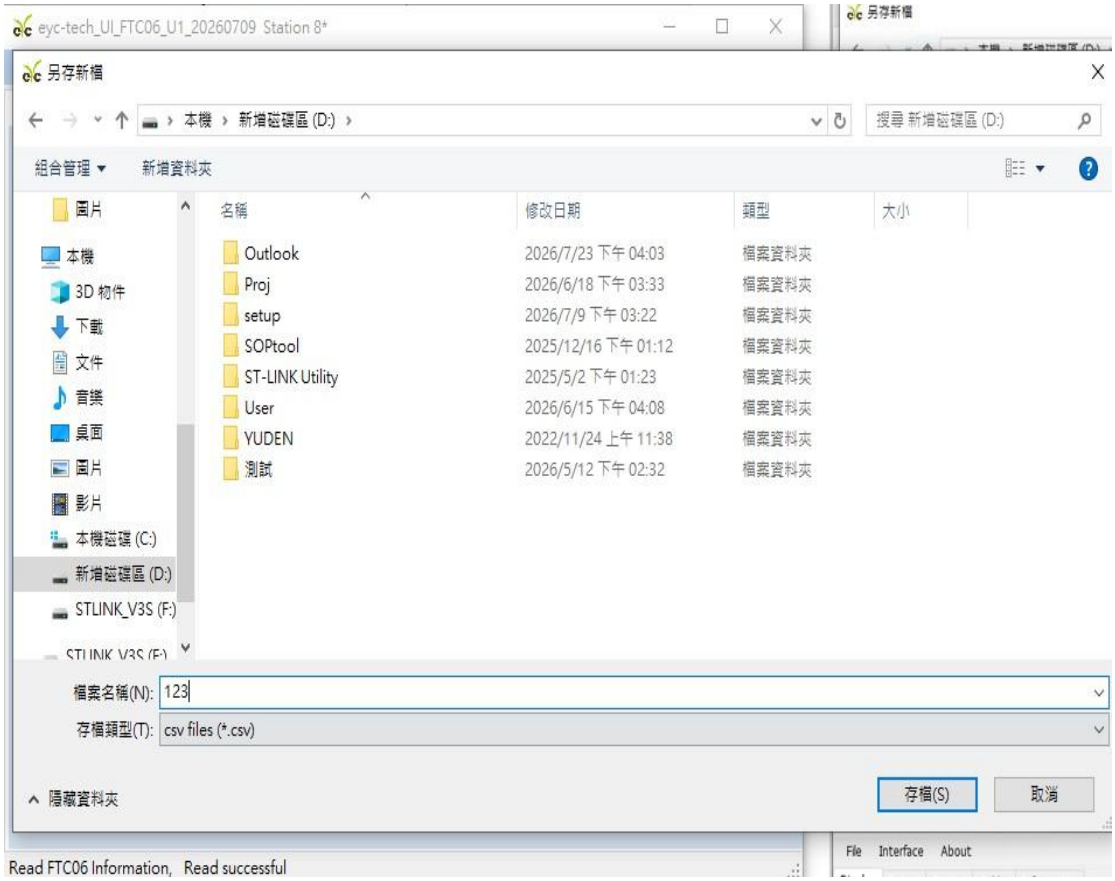
※Export/recording measurement

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

1-1. clock Display > Export



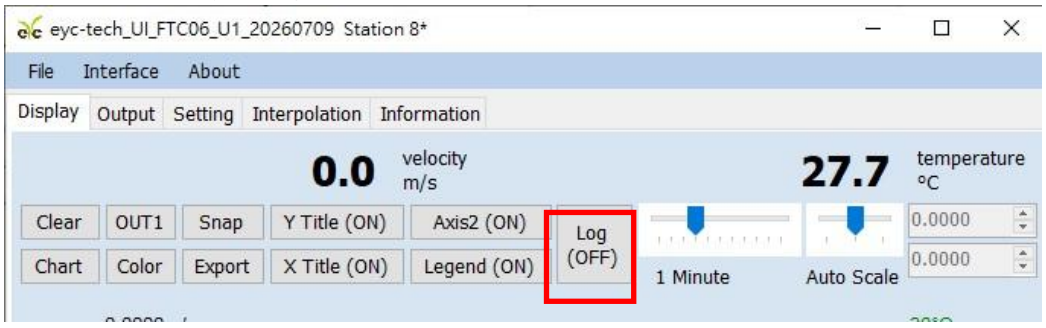
1-2. Specify the file path and file name > Save



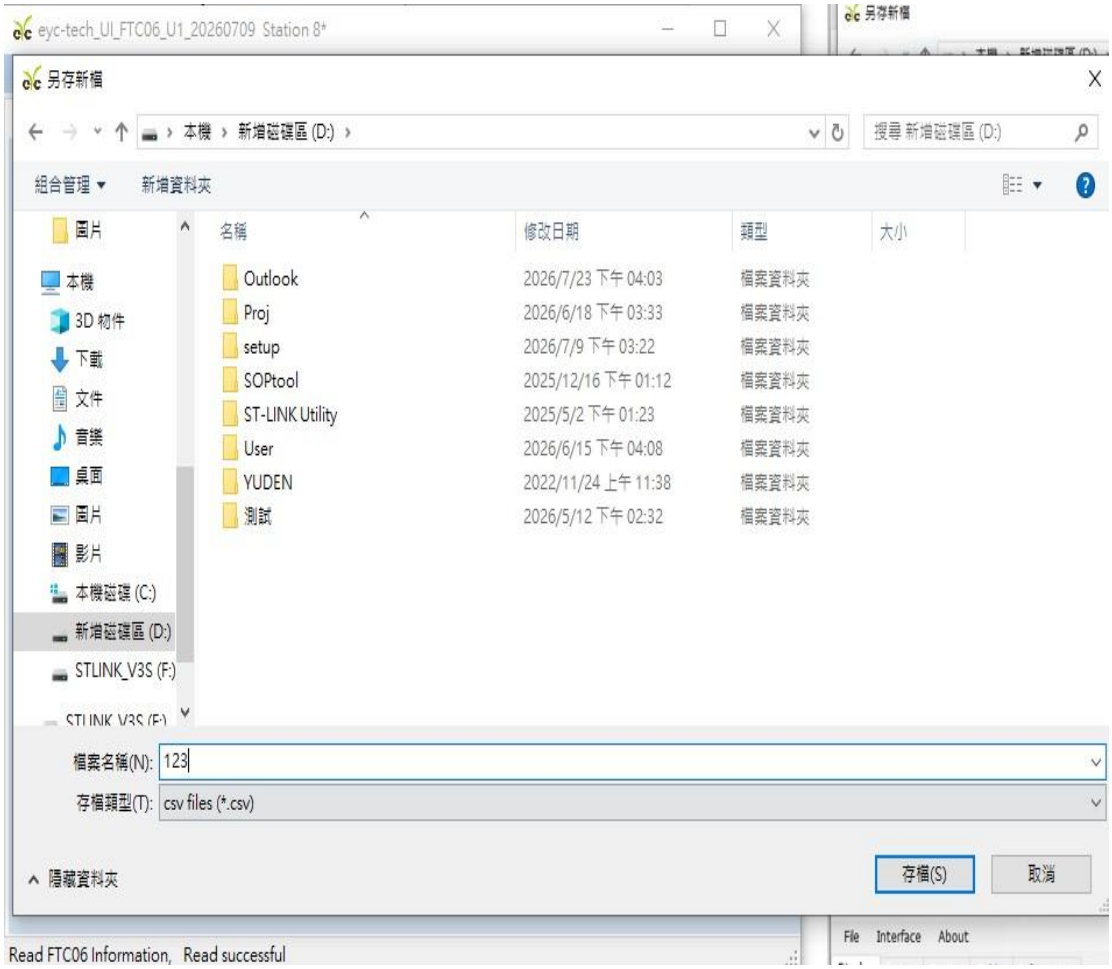
Note: If the specified file already exists, the data will be overwritten.

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

2-1. Clock Display > Log(OFF)

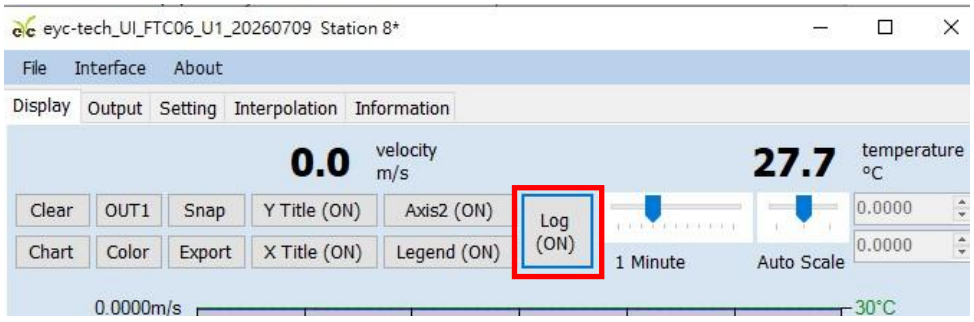


2-2. Specify the file path and file name > Save > Log(ON)



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.



8. Device Information

On the Information tab, you can find device information, including the following:

(1) Device Serial Number

(2) Product Name

FTC06-W: Liquid measurement

FTC06-A: Gas measurement.

(3) Firmware Version

(4) Output Type

(5) Calibration Method

(6) Temperature High/Low Calibration Point

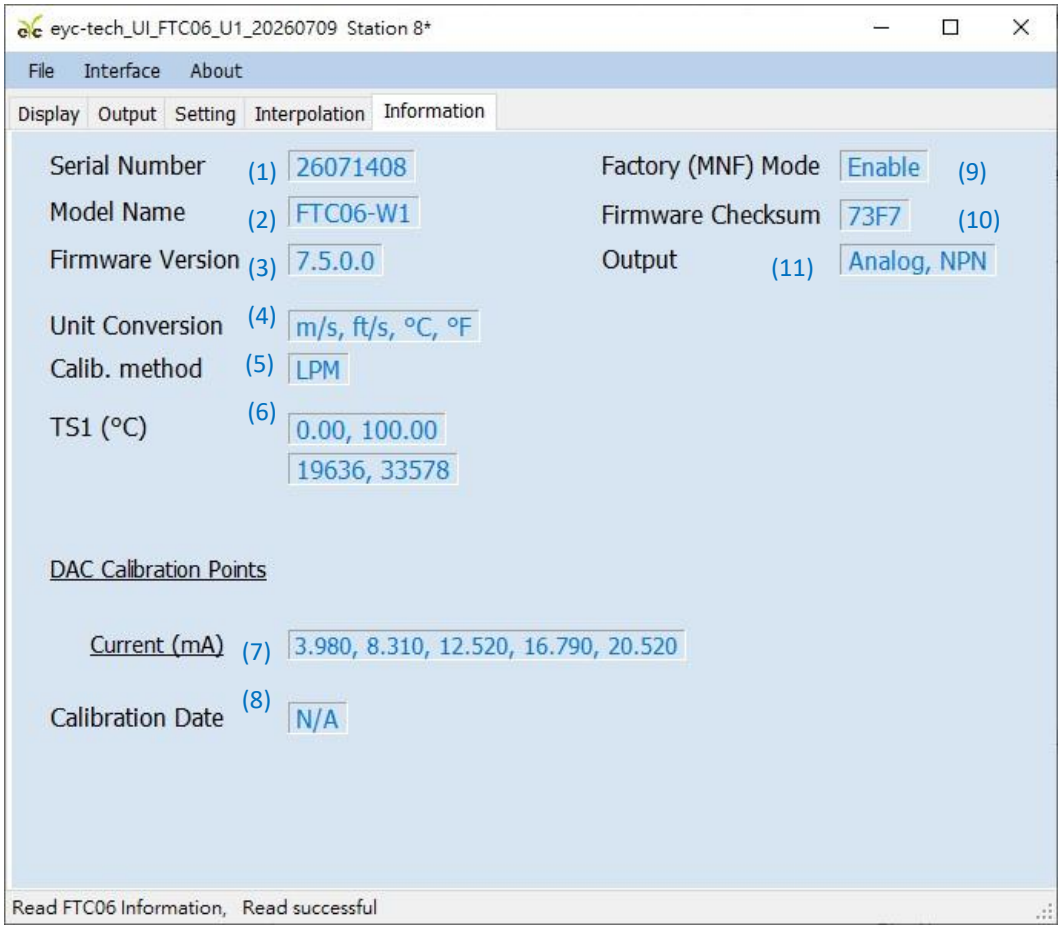
(7) Analog Output Calibration Point

(8) Calibration Date

(9) Factory Mode, should be displayed as Disabled under normal conditions

(10) Firmware Check Code

(11) Output Optional Function, standard products support analog output1 and NPN



V. Inspection and maintenance

1. Maintenance

The temperature and water flow sensors have been inspected and correctly adjusted at the factory, therefore no readjustment is required at the installation site. Please maintain them according to the following points:

(1) Regular Inspection

The maintenance cycle is determined based on the dust content and scale condition of the measured medium. Regular testing is conducted to confirm accuracy and to inspect and remove scale and crystals (if any) from the probe.

2. Repair and Handling of Abnormal Conditions:

(1) Sensing Element Protection

During the maintenance process, do not use any objects to scratch the surface of the probe to avoid damage.

(2) Abnormal Conditions and Their Repair and Handling

If any abnormality occurs during operation, please perform maintenance according to the table below and take necessary measures.

Problem	Cleck items	Soluations
●No output ●Unstable output	●Wiring error ●Loose or broken wiring ●Check power supply voltage	●Correct the wiring. ●Tighten the terminal block or replace the wiring. ●Replace the reader.
●Slow response to output ●Error present	●Confirm installation location ●Confirm the condition of the probe (dust and dirt) ●Installation angle ●Installation position	●Remove the main unit from the bracket. ●Clean the probe ●Refer to the installation instructions ●Calibration and adjustment

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

Tel.：886-2-8221-2958

Web：www.eyc-tech.com

e-mail：info@eyc-tech.com