FTI SENSOR

Operation-Manual

FTM06 Series Air / Water Thermal Mass Type Velocity Flow Transmitter

(Insert / Pipeline type)

FTM06D   FTM06T   FTM06I

FTM06 Series

Air / Water Thermal Mass Type Velocity Flow Transmitter

Contents

Air / Water Thermal Mass Type Velocity Flow Transmitter
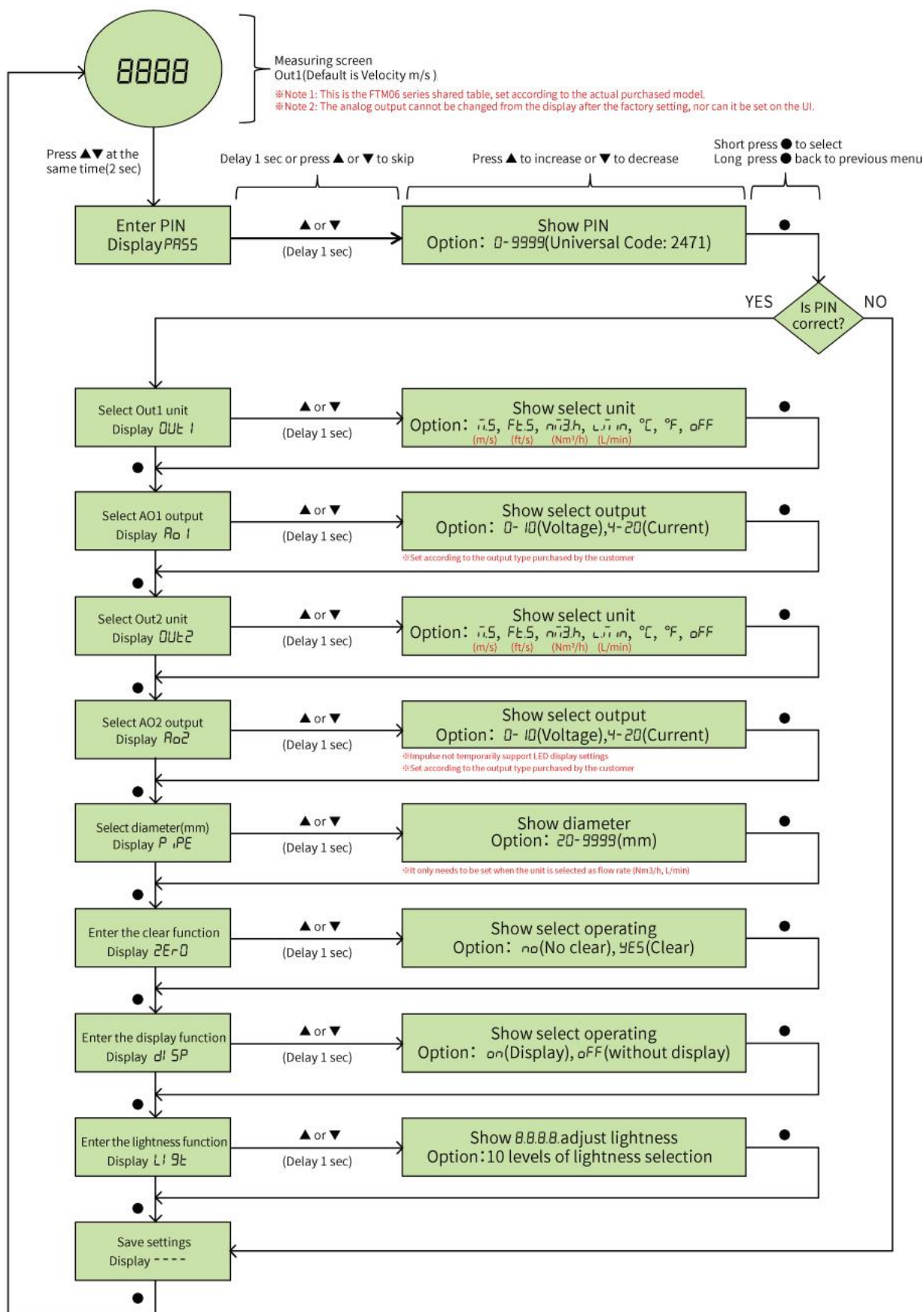
I. Safety Precautions

- Before using this product, the user must to read the details of this user's manual, then use this product with correct steps.
- This user's manual is for reference while using / Setting this product, and required to conserve properly.
- This product is improperly to use in explosion-proof area, do not use this product in dangerous situation where human health & life may be threaten & affected.
- If the user install this product in special environments as Dust-Free Room, Breed Environment for Animals, etc., please initiate a specialized product consultation to our professional sales of our company.
- If the improper & dangerous results which result from improper operator or improper environment, our company will not bear any legal responsibility.

Warning

- Please ensure the outlook / outbox do not have any damage which result from improper transportation, or malfunction which results from lost attachments.
- In order to prevent the GM from damages. This product must be used in the proper environment which specified in this user's manual.
- Please implement the wiring operation under power-off status; otherwise it will cause electric shock, or become the root cause of machinery breakdown.
- For prevent equipment damage, disconnect the power supply from the product before performing any wiring and installation.
- This product must be operated under ruled power supplying value, and be operated under the ruled normal operation conditions which described in the user's manual ; otherwise it may cause the disasters as fire accident or be the root cause of machinery breakdown.
- This product must be operated under the operating conditions specified in manual to prevent equipment damage.
- Installation and wring must be performed by qualified personnel in accordance with all applicable safety standards, According to applicable safety standards all wiring must comply with local codes of indoor wiring and electric installation rules.
- All wiring must comply with the rule for indoor wiring and electrical installation rules. The screw must be tight for upper cover & lower base.
- In order to prevent the interferences from frequency converter, etc., and avoid error signal to result in the product damage, please use the isolated conducting wire.
- 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.
- While discard this product, the user must to comply with the related rules for industrial domestic wastes for different country / location.
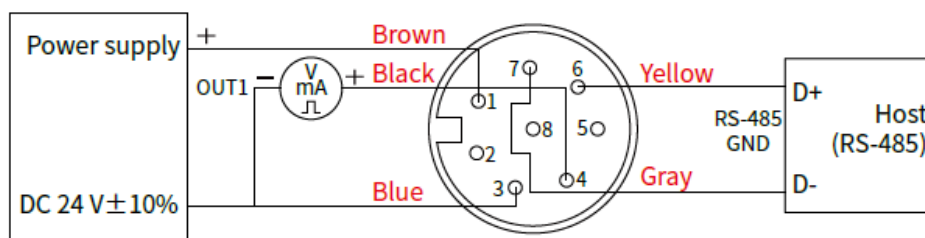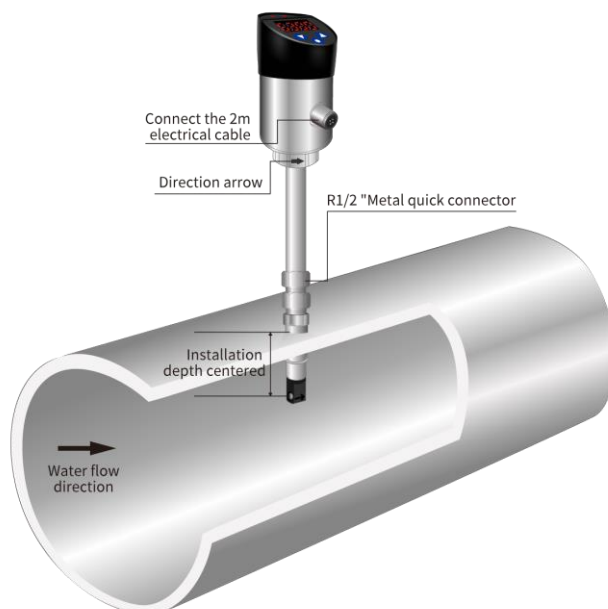
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II. Operation Form

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Measuring screen
Out1(Default is Velocity m/s)
※Note 1: This is the FTM06 series shared table, set according to the actual purchased model.
※Note 2: The analog output cannot be changed from the display after the factory setting, nor can it be set on the UI.

Press ▲▼ at the same time(2 sec)

Delay 1 sec or press ▲ or ▼ to skip

Press ▲ to increase or ▼ to decrease

Short press ● to select
Long press ● back to previous menu

| Enter PIN Display *PASS* | ▲ or ▼ (Delay 1 sec) | Show PIN Option：*0-9999*(Universal Code: 2471) | ● |

Is PIN correct? YES / NO

| Select Out1 unit Display *OUT1* | ▲ or ▼ (Delay 1 sec) | Show select unit Option：*m.S, Ft.S, m3.h, L.m in*, ℃, ℉, *oFF* (m/s) (ft/s) (Nm³/h) (L/min) | ● |

| Select AO1 output Display *Ao1* | ▲ or ▼ (Delay 1 sec) | Show select output Option：*0-10*(Voltage),*4-20*(Current) ※Set according to the output type purchased by the customer | ● |

| Select Out2 unit Display *OUT2* | ▲ or ▼ (Delay 1 sec) | Show select unit Option：*m.S, Ft.S, m3.h, L.m in*, ℃, ℉, *oFF* (m/s) (ft/s) (Nm³/h) (L/min) | ● |

| Select AO2 output Display *Ao2* | ▲ or ▼ (Delay 1 sec) | Show select output Option：*0-10*(Voltage),*4-20*(Current) ※Impulse not temporarily support LED display settings ※Set according to the output type purchased by the customer | ● |

| Select diameter(mm) Display *PIPE* | ▲ or ▼ (Delay 1 sec) | Show diameter Option：*20-9999*(mm) ※It only needs to be set when the unit is selected as flow rate (Nm3/h, L/min) | ● |

| Enter the clear function Display *ZErO* | ▲ or ▼ (Delay 1 sec) | Show select operating Option：*no*(No clear), *YES*(Clear) | ● |

| Enter the display function Display *diSP* | ▲ or ▼ (Delay 1 sec) | Show select operating Option：*on*(Display), *oFF*(without display) | ● |

| Enter the lightness function Display *LIgt* | ▲ or ▼ (Delay 1 sec) | Show *8.8.8.8.*adjust lightness Option：10 levels of lightness selection | ● |

| Save settings Display ---- | | | |

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III. Connection Diagram

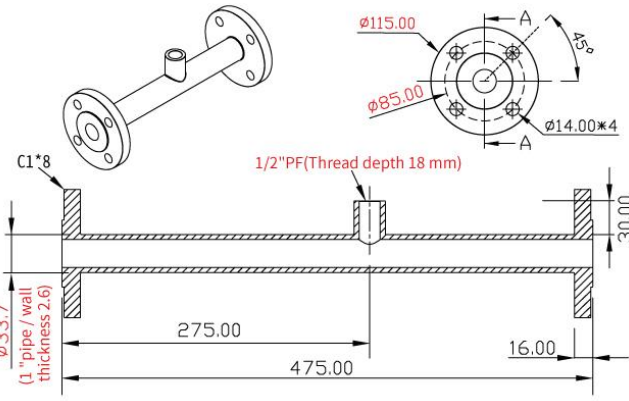Analog+RS-485 / Impulse+RS-485

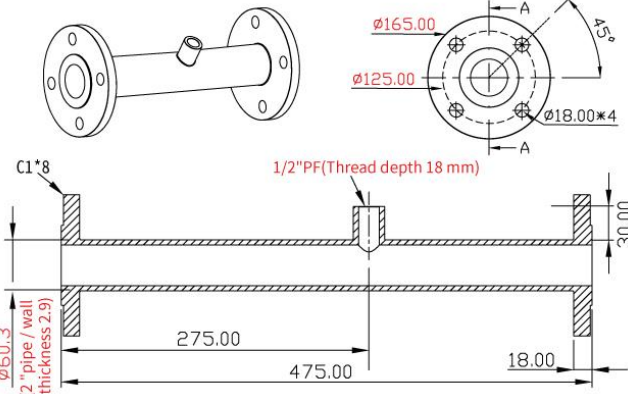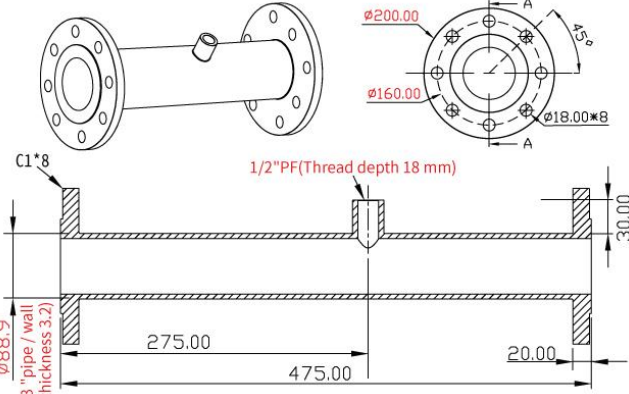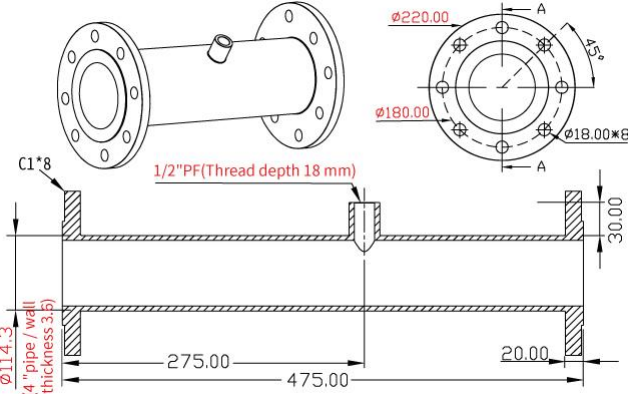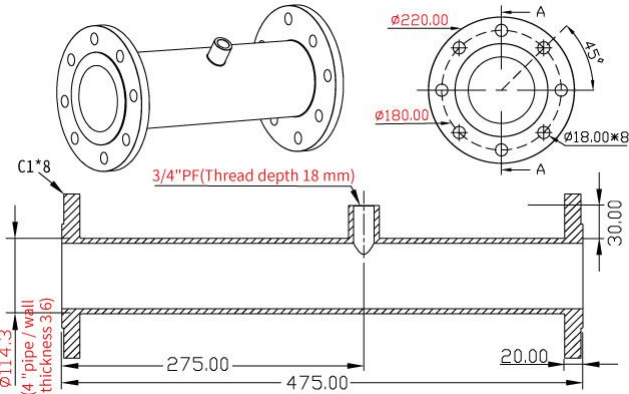## IV. Installation

1. FTM06D

2. FTM06T

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Available Options: Installation-Flange Pipe (Unit:mm)

Photo reference	Order number : 8207104000 Product name : (DIN PN16)DN25 flow tube (1") Specification : ME-006-0004,Inner diameter 1", L:475mm, SUS304, 1/2" PF

Order number : 8207104001 Product name : (DIN PN16)DN50 flow tube (2") Specification : ME-006-0005,Inner diameter 2", L:475mm, SUS304, 1/2" PF	Order number : 8207104002 Product name : (DIN PN16)DN80 flow tube (3") Specification : ME-006-0006,Inner diameter 3", L:475mm, SUS304, 1/2" PF

Order number : 8207104003 Product name : (DIN PN16)DN100 flow tube (4") Specification : ME-006-0007,Inner diameter 4", L:475mm, SUS304, 1/2" PF	Order number : 8207104004 Product name : (DIN PN16)DN100 flow tube (4") Specification : ME-006-0008,Inner diameter 4", L:475mm, SUS304, 3/4" PF

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3. FTM06I

Installation instructions:

90° pipe(water passes through the pipe turn)	Continuous 90° pipes in different horizontal planes (vertical water flow and through curved pipes)
20×D 5×D	40×D 5×D
Tube expanding state (water flow becomes large from small)	**Control valve status (switch switching / water flow adjustment)**
25×D 5×D	50×D 5×D
Shrinking tube state (water flow from large to small)	**The water flows continuously through the 90° bend in the same horizontal plane**
5×D 15×D	25×D 5×D

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V. RS-485 and Modbus

FTM06 integrate 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

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VI. Software and calibration operation step

Free installation program： -FTM06D-UI-XXXXXXXX(date)-1.0.2.exe

(※Please use installation program when free program doesn't execute)

Installation program： -FTM06D-UI-XXXXXXXX(date)-1.0.2.rar

a. Operating System requirements：above Windows XP SP2

b. Click Setup to install

FTM06D-UI-20200923-1.0.2

1. Hardware connection：Connect the FTM06D to PC by USB to RS-485 or RS-232 to RS-485 converter

2. Check the COM port number from Device Manager in Computer Management

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3. Open the FTM 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
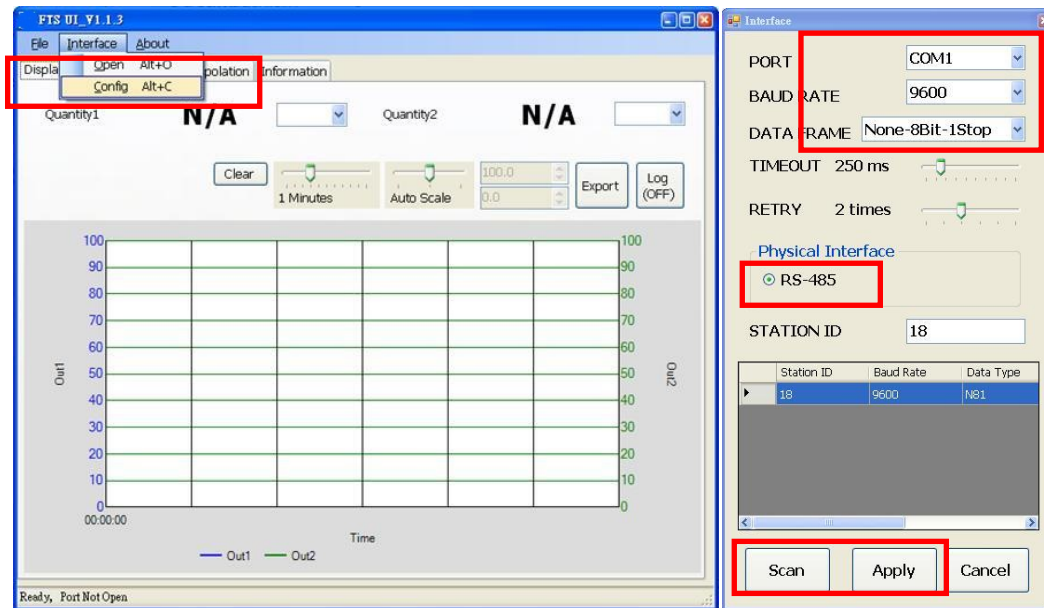
4. Scan RS-485 connection

Open the FTM 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 ＂Scan＂ for connection.
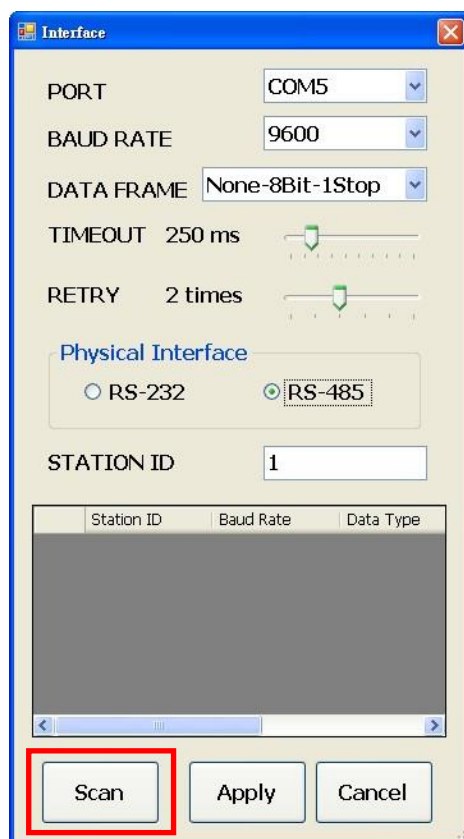
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Elect Station ID and Click "CLOSE AND EXPORT"
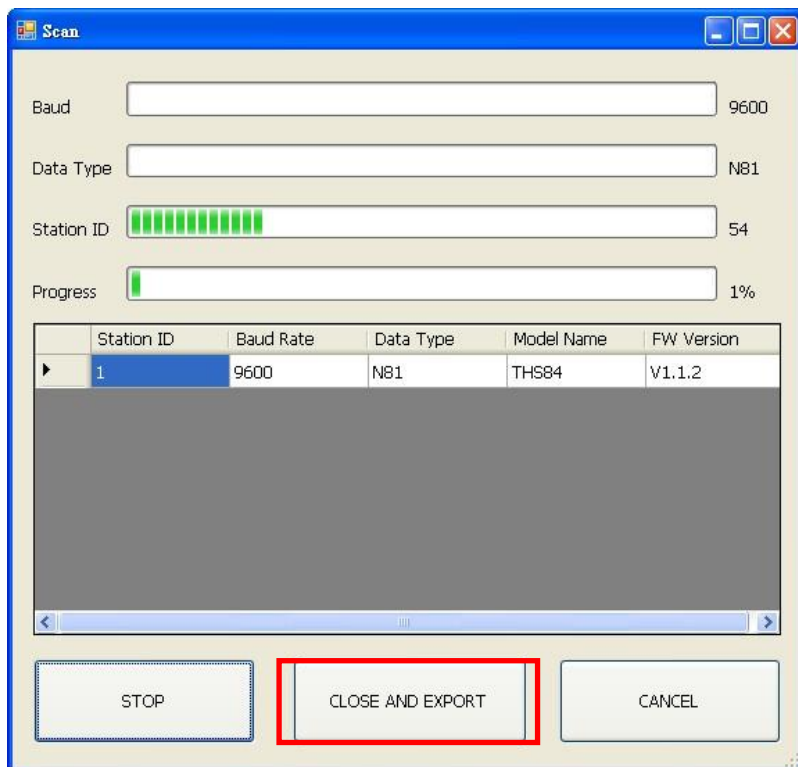
Click Apply
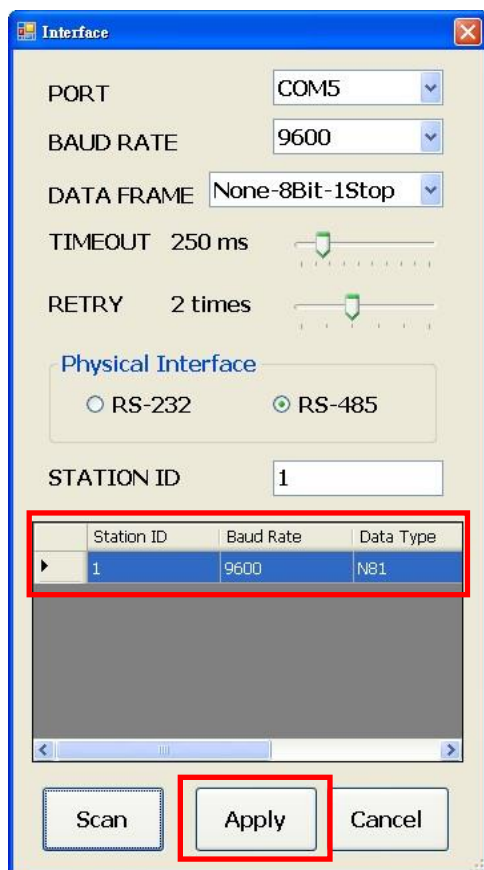
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5. Setting on Analog Output

   (1) Quantity：Flow Velocity, Temperature

   (2) Response rate：0 … 100，100：filter off，90：filter = 60 second，80：filter = 120 second, etc.

   (3) Analog type：0 … 20 mA / 4 … 20 mA / 0 … 10 V

   (4) Range for Upper and Lower

   (5) Select voltage and current output

   (6) Freq. (0 … 100 HZ) corresponding to range(0…60m/s) output

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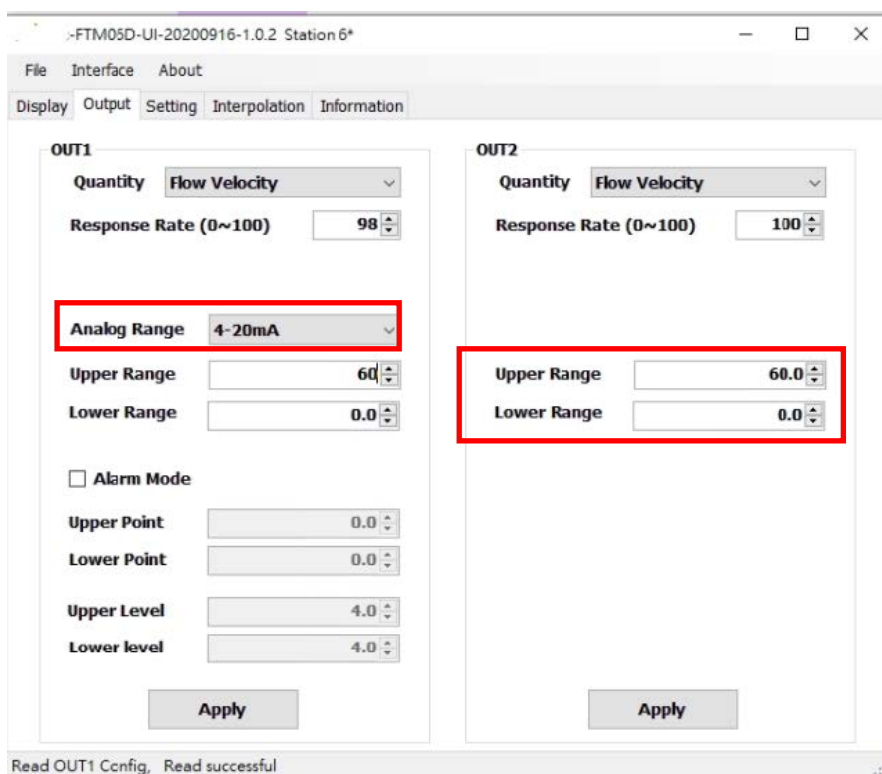
6. Setting on RS-485 and offset adjustment

   (1) Station ID：1 … 247

   (2) Baud Rate：9600 / 19200 / 38400 / 57600 / 115200

   (3) Data Frame：None-8Bit-1Stop / None-8Bit-2Stop / Even-8Bit-1Stop / Even-8Bit-2Stop / Odd-

      8Bit-1Stop / Odd-8Bit-2Stop

   (4) Flow Offset adjustment

   (5) Temperature Offset adjustment

   (6) Display password and brightness setting

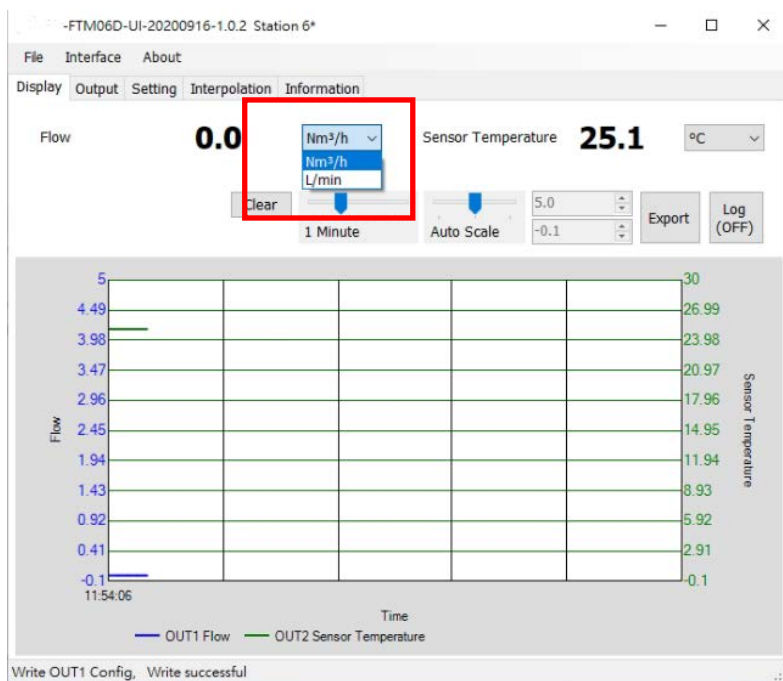   (7) Auto zero function by holding Apply key a few seconds

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7. Data display and logging

   (1)   Flow velocity unit：[m/s]、[ft/s]、[Nm/s]

   (2)   Temperature unit：°C / °F

   (3)   Export file: *.CSV

   (4)   Flow Output：unit [m3/h]、[L/min]
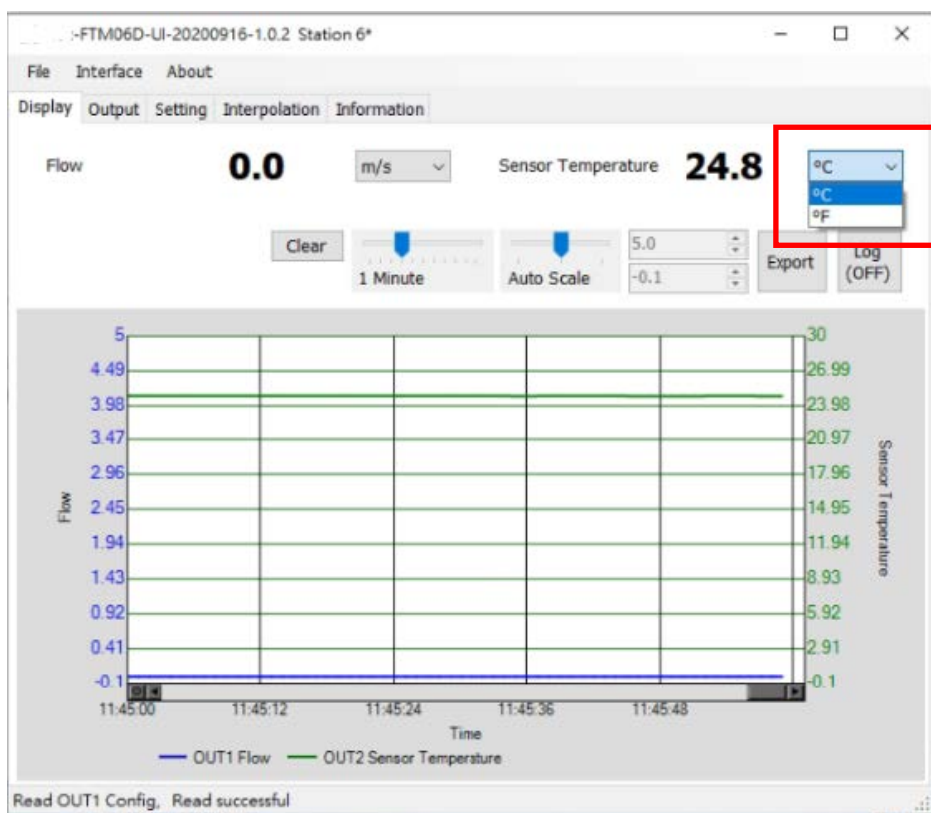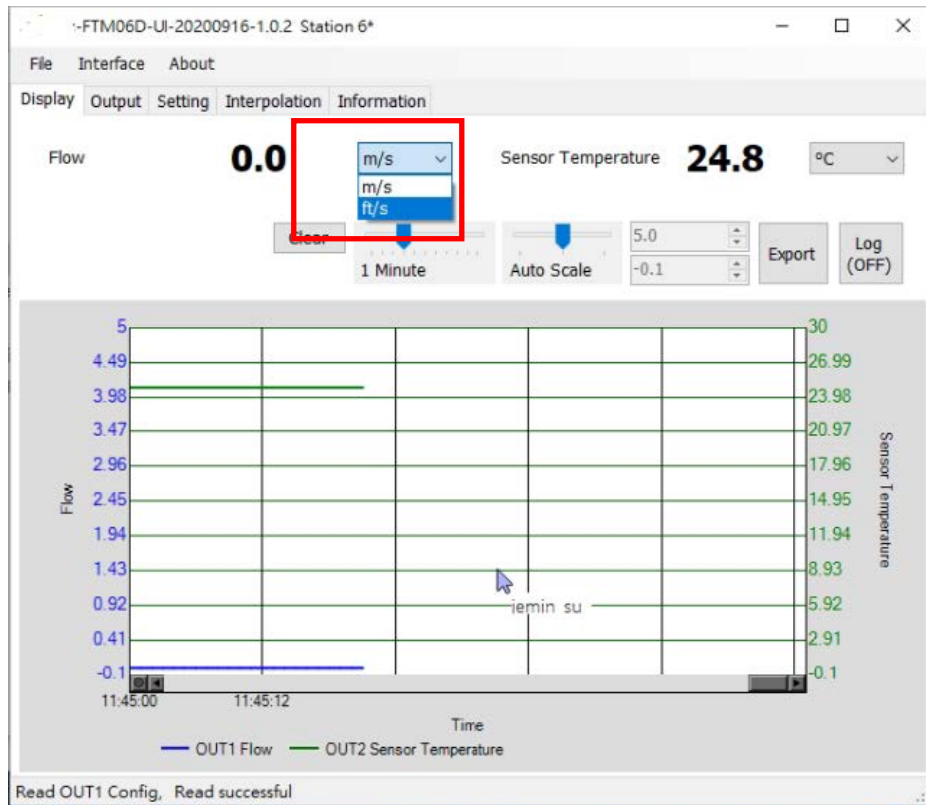
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8. Device Information

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VII. 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, and clean the cover

    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 ●Replace the sensor
●Slow response to output ●Error in output	●Moisture / Condensation on the product ●Check installed location ●Check installed angle ●Check dust and contamination on the sensor	●Remove the sensor and filter dry power-off state sensor in clean air seasoning ●Refer to the section ●Align measurement head with flow direction ●Cleaning the filter ●Changing the filter ●Calibrate ●Replace the sensor

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Measuring Specialist