



Operation Manual

eyc-tech TP05

Temperature Transmitter



eyc-tech TP05

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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.

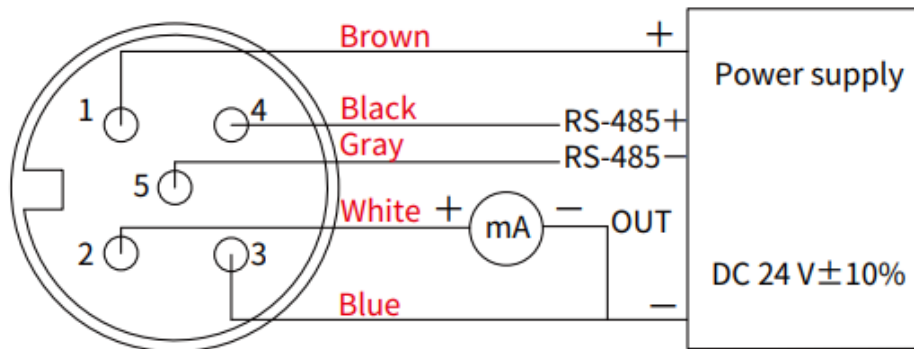
Do not use this product in a situation where human life may be affected.

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. Connection Diagram



M12, 4P

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

3. RS-485 and Modbus

TP05 integrates a RS-485 interface for digital communication capability. 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

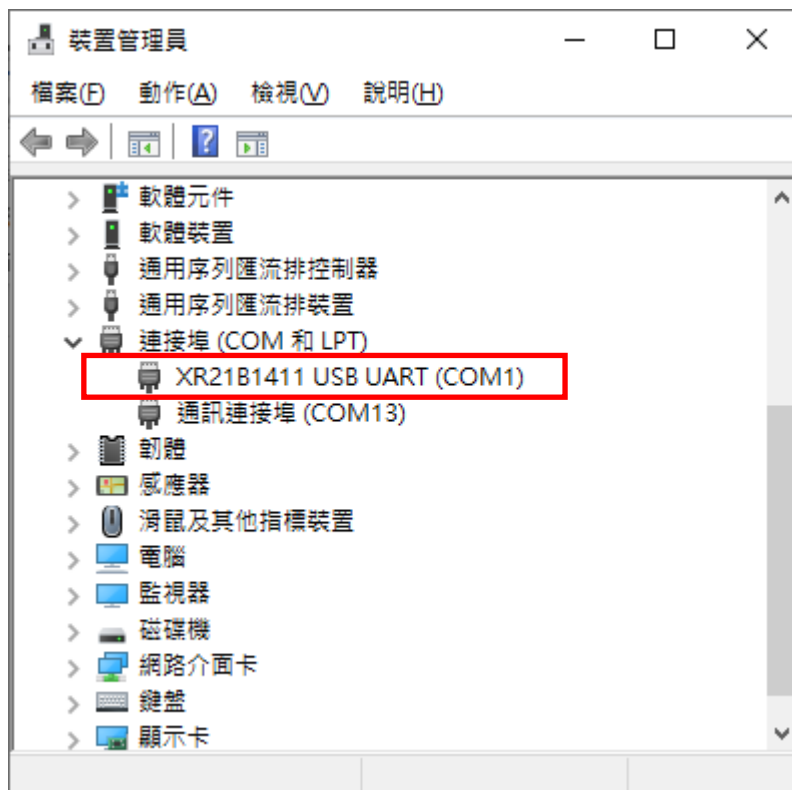
4. Configuration

Download the configuration software from eyc-tech website, decompress it and execute

it. The operating system requirements: Windows 10 or above. Hardware requirements:

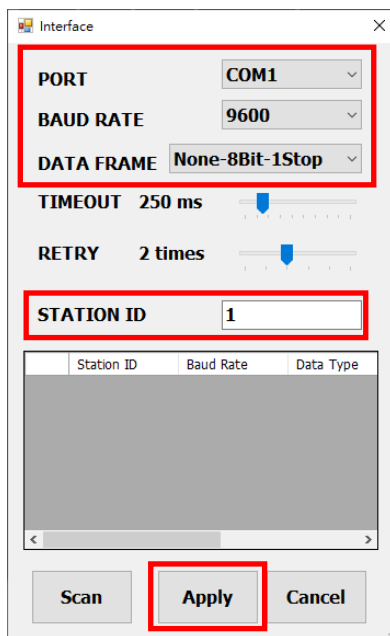
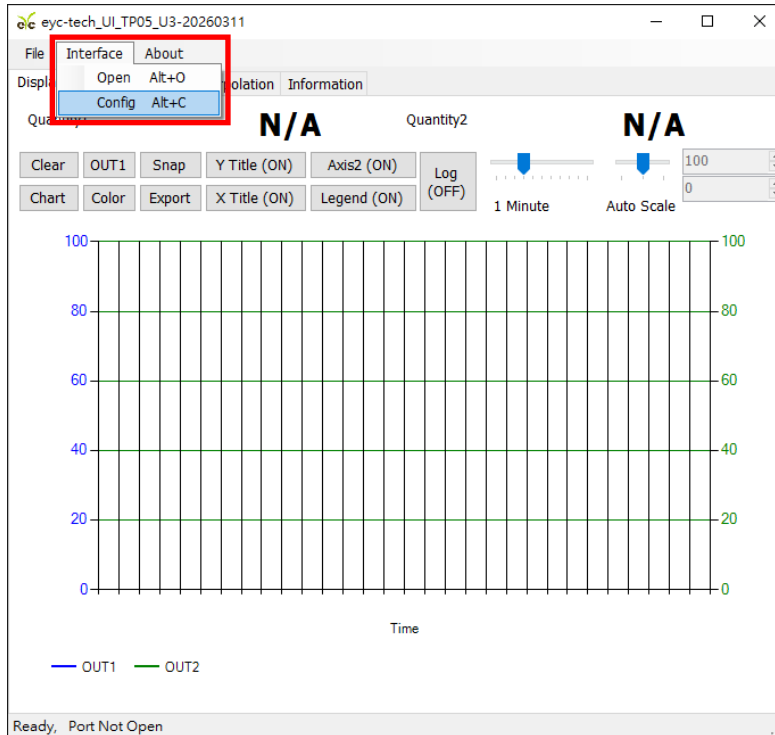
RS-485 interface, such as a USB to RS-485 or RS-232 to RS-485 converter

1. Hardware connection : Connect the TP05 to PC through USB to RS-485 or RS-232 to RS-485 converter
2. Check the COM port number from Device Manager in Computer Management. e.g. COM1 in illustration



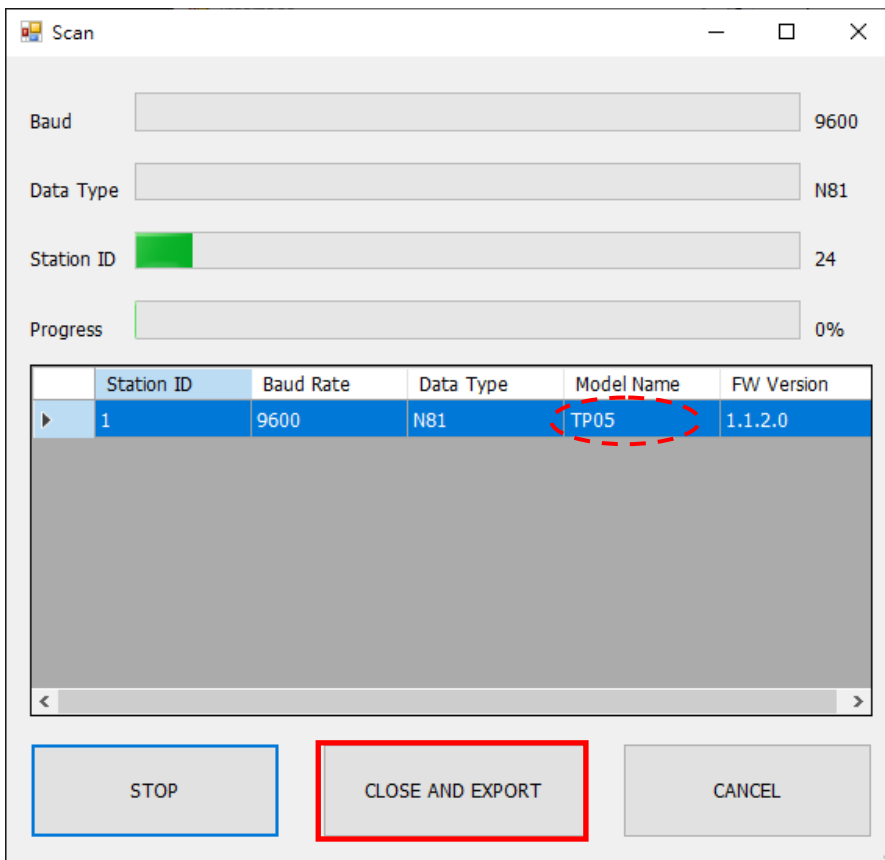
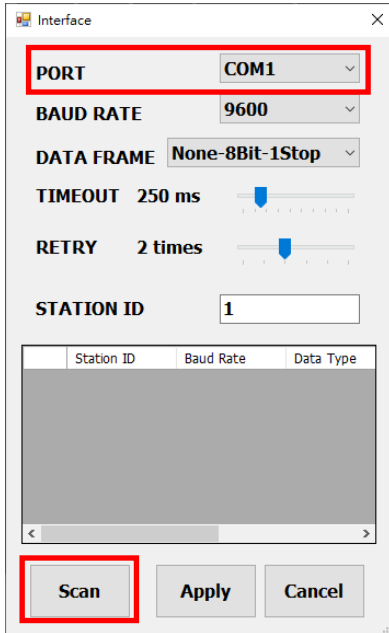
Temperature Transmitter

- Open the TP05 UI, go to function "Interface", click item "Config" and then setting COM port, BAUD rate, data format and Station ID, pressed "Apply" for connection



4. Scan RS-485 connection

Open the TP05 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.

5. Setting on Output

On the Output tab, within the OUT1 group, you can set the analog output span and ON/OFF control simulation. The settings fields are as follows:

- (1) Output Physical Quantity: Temperature (unit can be selected on the Setting tab).
- (2) Analog Range: 0 ... 20 mA / 4 ... 20 mA
- (3) Measurement Range: Set the upper and lower points of the digital range corresponding to the analog range.
- (4) Alarm Mode: Checking this box will cause the analog signal to use a hysteresis alarm output.
- (5) Alarm Trigger Point: High Alarm alarms when the temperature is higher than the trigger point; Low Alarm alarms when the temperature is lower than the trigger point.
- (6) Alarm Reset Gap: The difference between the alarm trigger point and the reset point.
- (7) Alarm Trigger Level: The level at which the alarm is triggered.
- (8) Alarm Reset Level: The level when the alarm is not triggered.
- (9) Apply: Writes the settings to the device. Changes made will be discarded if this button is not pressed.
- (10) Read: Reads the device's settings.

eyc-tech_UI_TP05_U3-20260311 Station 1*

File Interface About

Display Output Setting Interpolation Information

OUT1

(1) Quantity

Voltage Current

(2) Measures Range

(3) Upper Range

Lower Range

(4) Alarm Mode

(5) Set Point

(6) Hysteresis

(7) Activate Level

(8) Inactivate Level

Read OUT1 Config, Read successful

6. Setting on RS-485 and response time

There are 3 groups in setting tab. The description of each item is below.

※ Temperature Measurement :

- (1) Temperature Offset
- (2) Temperature Unit, Select °C or °F. This unit will affect the offset and range settings.

※ Modbus Protocol :

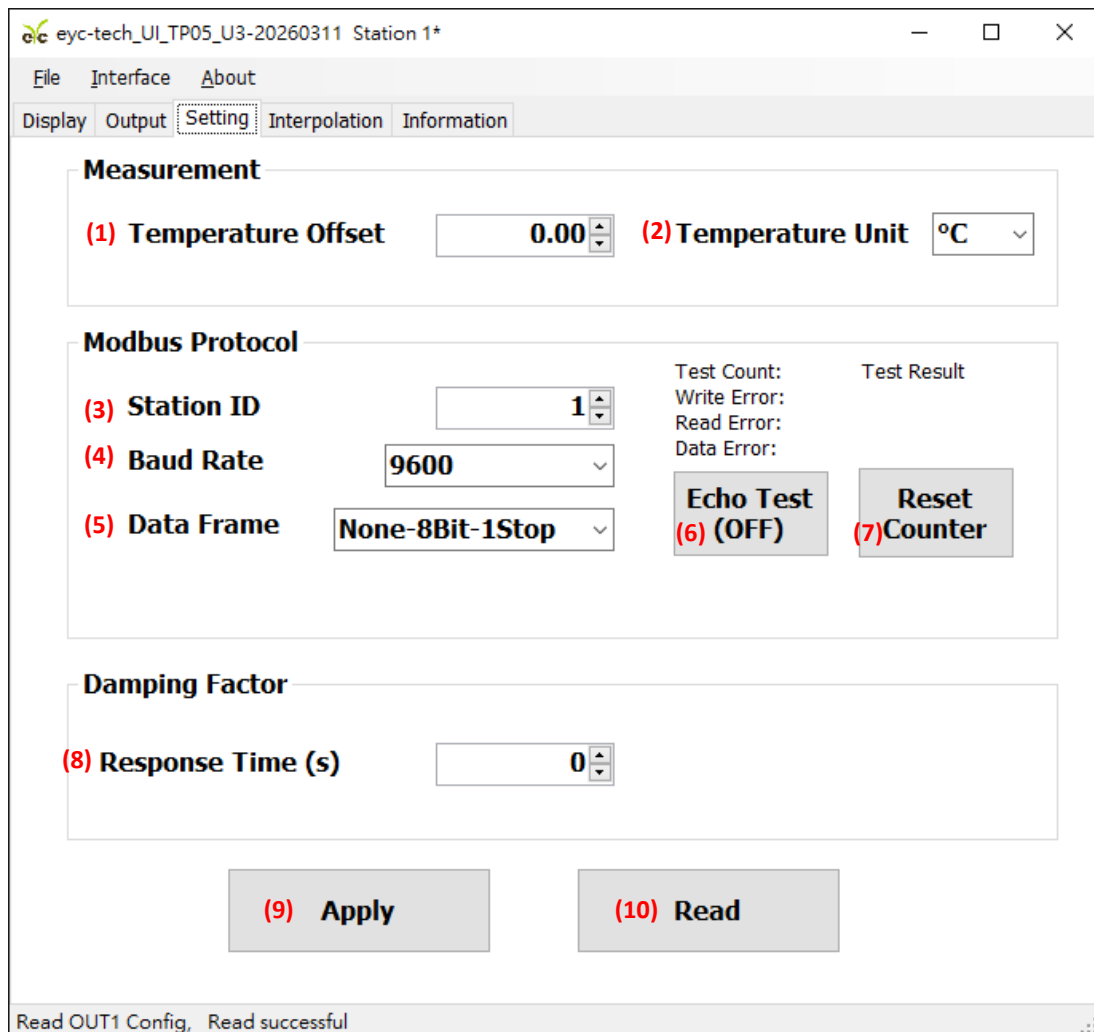
- (3) station ID
- (4) Baud Rate
- (5) Data Frame
- (6) Modbus Echo Test Enable/Disable
- (7) Modbus Echo Test Result Reset

※ Damping Control :

- (8) 1st Order Low Pass Filter T90 rise time, 0 second faster) and 100 seconds maximum (slower)

※ Others

- (9) Write Setting
- (10) Read Setting



eyc-tech UI TP05_U3-20260311 Station 1*

File Interface About

Display Output **Setting** Interpolation Information

Measurement

(1) Temperature Offset (2) Temperature Unit

Modbus Protocol

(3) Station ID Test Count: Write Error: Read Error: Data Error:

(4) Baud Rate Echo Test (6) (OFF) Reset Counter (7)

(5) Data Frame

Damping Factor

(8) Response Time (s)

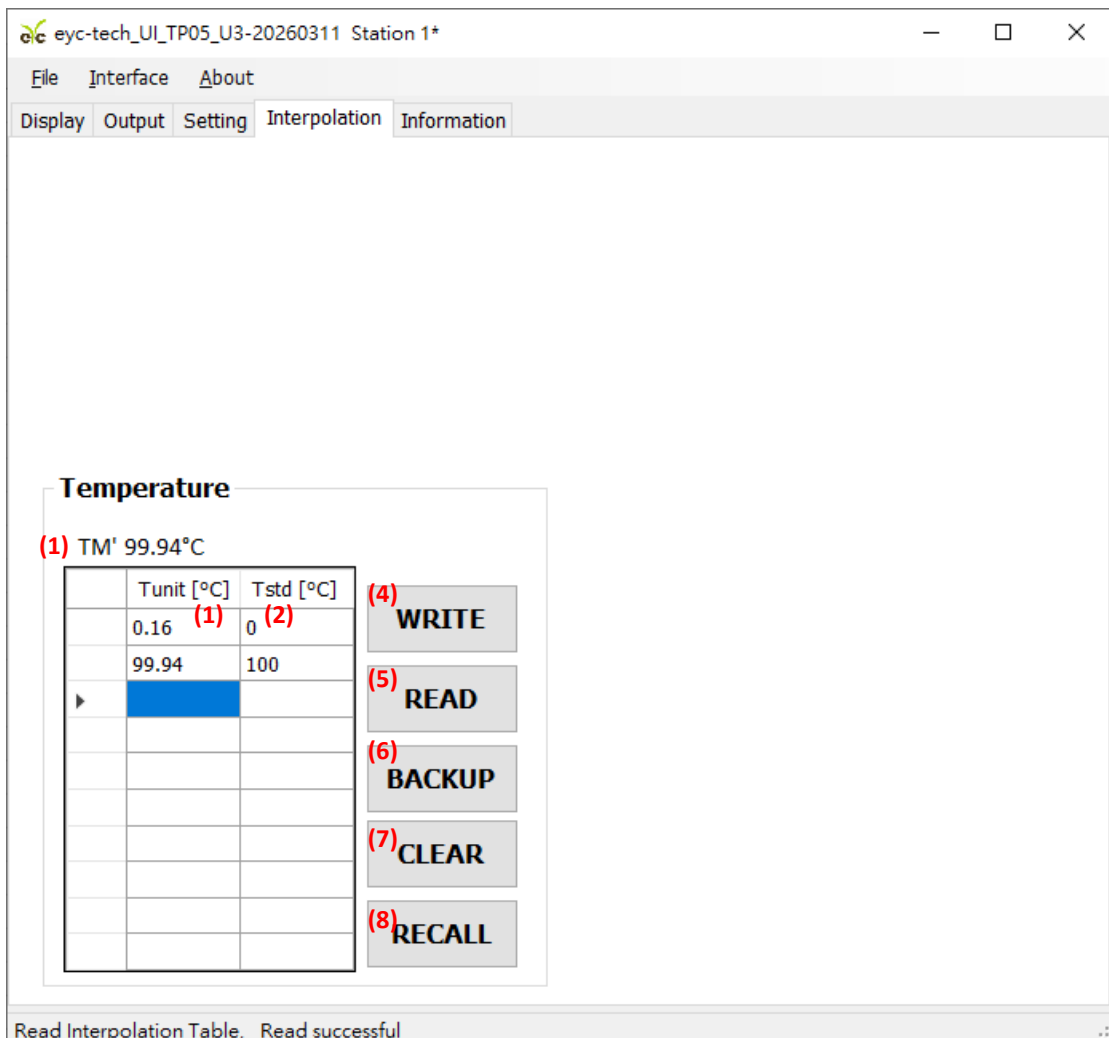
(9) Apply (10) Read

Read OUT1 Config, Read successful

7. Linear Interpolation

In the interpolation tab, specify the linear interpolation points

- (1) Instantaneous temperature value before interpolation
- (2) Interpolation input line: Device measurement value (raw value)
- (3) Interpolation output line: Device output value (standard value or correction value)
- (4) Write the interpolation table to the device
- (5) Read the device's interpolation table
- (6) Back up 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) Read the device's backup interpolation table



Temperature

(1) TM' 99.94°C

	Tunit [°C]	Tstd [°C]
	0.16 (1)	0 (2)
	99.94	100
▶		

(4) WRITE

(5) READ

(6) BACKUP

(7) CLEAR

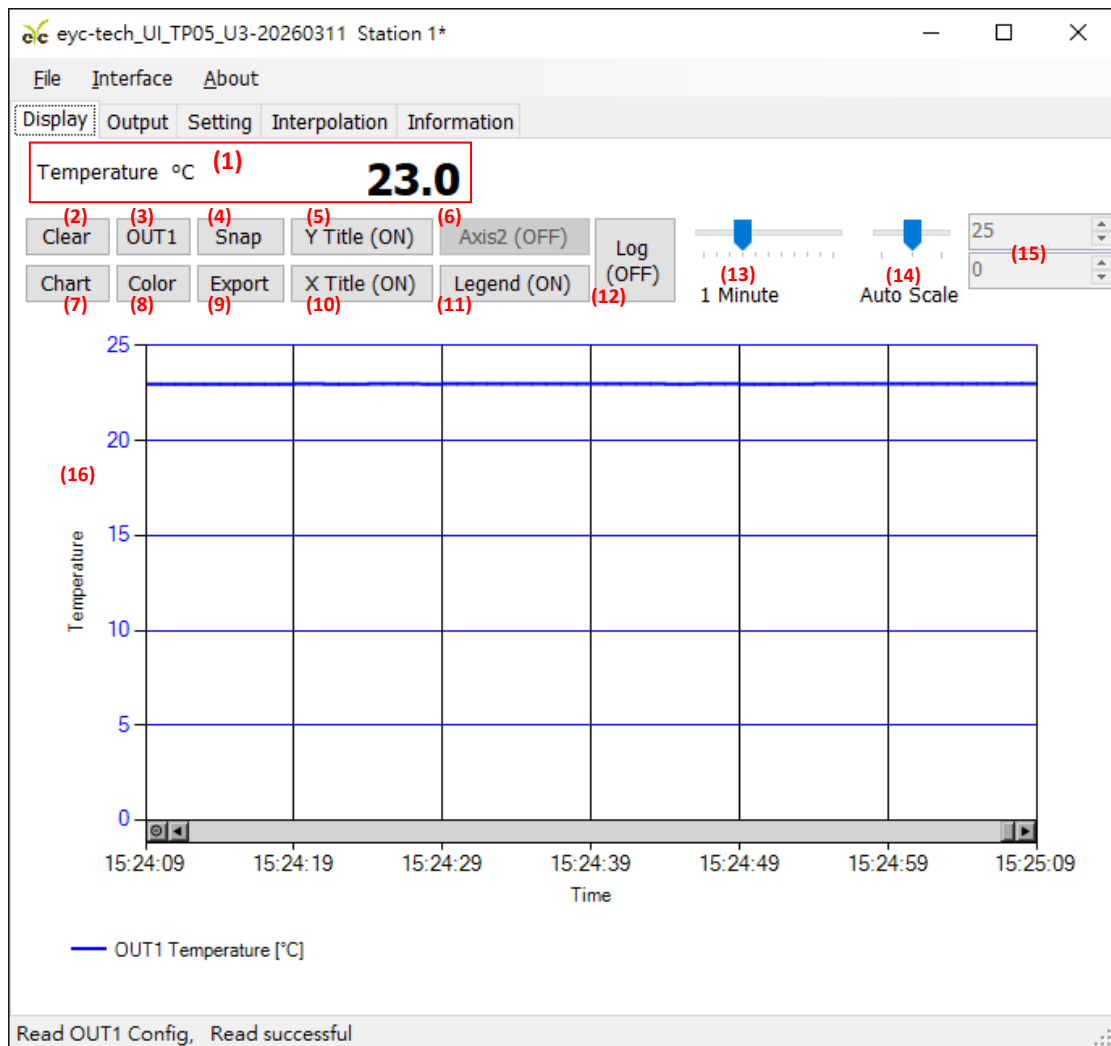
(8) RECALL

Read Interpolation Table, Read successful

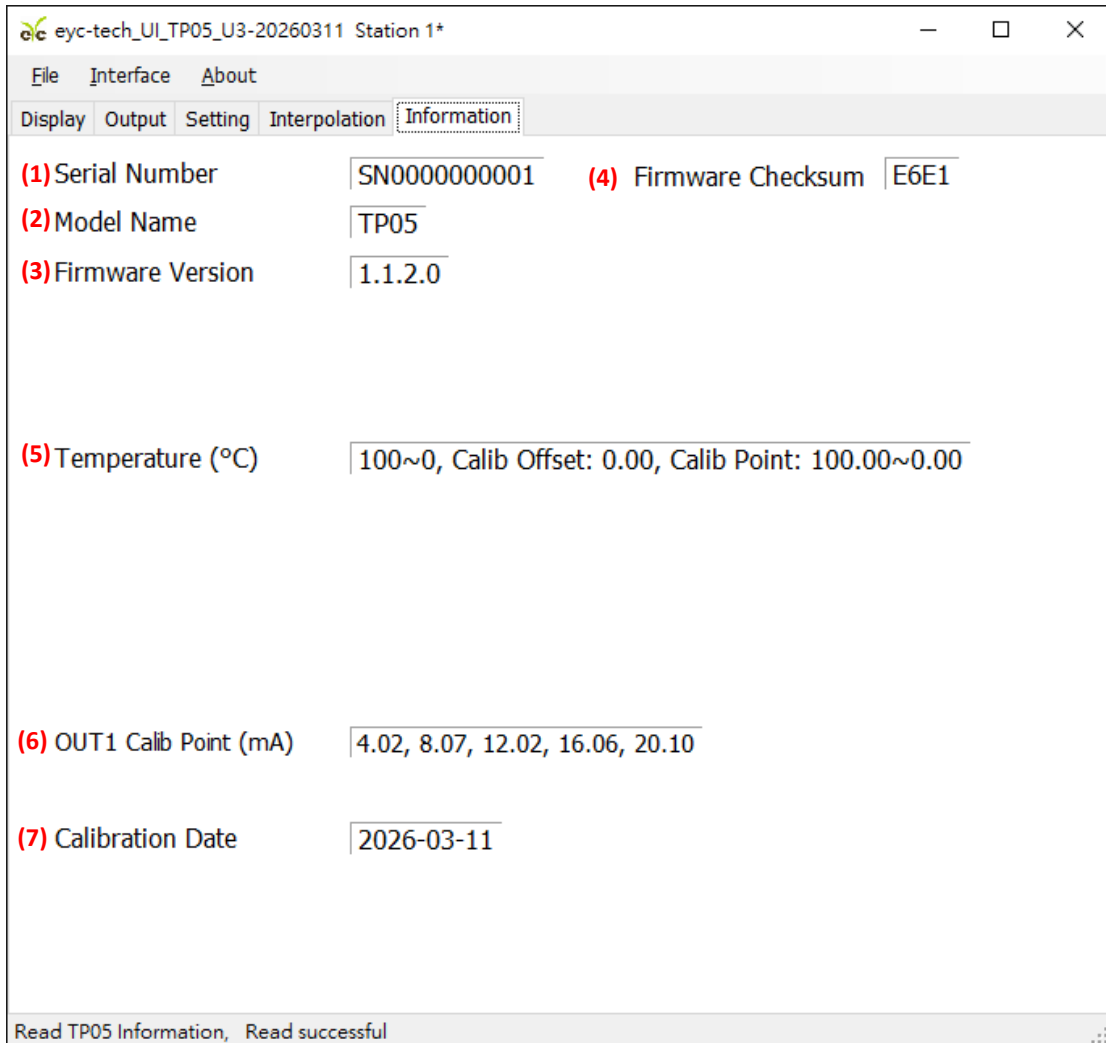
Note: The illustration shows a linear correction example where the device measures 0.16 °C when comparing the standard part at 0 °C, and 99.94 °C when comparing the standard part at 100 °C.

8. Data display and logging

- (1) The measurement of Temperature will be display here
- (2) Clear plot chart
- (3) Toggle the selection channel of color function, refer to item (8) (TP05 only one channel)
- (4) Snap the current plot chart
- (5) Display title of vertical axis (ON or OFF toggle in turn once click)
- (6) Enable secondary axis (right axis)
- (7) Change chart line style in turn
- (8) Select the color of plot channel
- (9) Export the records in plot buffer
- (10) Enable horizontal axis
- (11) Enable the legend of plot channel
- (12) Enable the log function, the data in cvs format with comma delimiter
- (13) The scale of horizontal scale
- (14) Select the scale method of vertical axis
- (15) Select the range of vertical axis
- (16) The vertical axis, label of OUT1



9. Device Information
 - (1) Serial Number
 - (2) Model Name
 - (3) Firmware Version
 - (4) Firmware Checksum
 - (5) Measurement span, factory temperature reference point and calibration points
 - (6) Analog output calibration points
 - (7) Calibration Date



The screenshot shows a software window titled "eyc-tech_UI_TP05_U3-20260311 Station 1*" with a menu bar (File, Interface, About) and a tabbed interface (Display, Output, Setting, Interpolation, Information). The "Information" tab is active, displaying the following data:

(1) Serial Number	SN0000000001	(4) Firmware Checksum	E6E1
(2) Model Name	TP05		
(3) Firmware Version	1.1.2.0		
(5) Temperature (°C)	100~0, Calib Offset: 0.00, Calib Point: 100.00~0.00		
(6) OUT1 Calib Point (mA)	4.02, 8.07, 12.02, 16.06, 20.10		
(7) Calibration Date	2026-03-11		

Read TP05 Information, Read successful

5. 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 :

- Periodic inspection

Periodically inspect this product for its sensing accuracy. The maintenance cycle is determined based on the dust content and dirt condition of the measured medium. Regular testing is conducted to confirm accuracy and to check and remove dirt and crystals (if any) from the probe.

2. Troubleshooting

- Sensor maintenance

Do not damage sensor surface during the maintenance process.

- Troubleshooting

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

Problem	Cleck items	Soluations
<ul style="list-style-type: none"> ● No output ● Unstable output 	<ul style="list-style-type: none"> ● Disconnected wiring ● Loose wiring ● Power supply voltage ● Sensor damages 	<ul style="list-style-type: none"> ● Re-perform wiring ● Crew on terminal tightly or replace wires ● Replace the sensor
<ul style="list-style-type: none"> ● Slow response to output ● Errow in output 	<ul style="list-style-type: none"> ● Moisture /condensation on the product ● Check installed location ● Check installed angle ● Check dust and contamination on the sensor 	<ul style="list-style-type: none"> ● If condensation forms on the sensor due to cold air exposure, allow it to rest at ambient temperature until all surface moisture has completely dried before proceeding with installation and powering on ● Align measurement head with flow direction ● Cleaning the Sensor rod ● Calibrate ● Replace the sensor

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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