



eyc-tech THE120 Relative Humidity Sensor User Manual

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Security considerations

Please read this Specification carefully, prior to use of this, and keep the manual properly, for timely reference.

Solemn Statement :

This product cannot be used for any explosion-proof area.

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

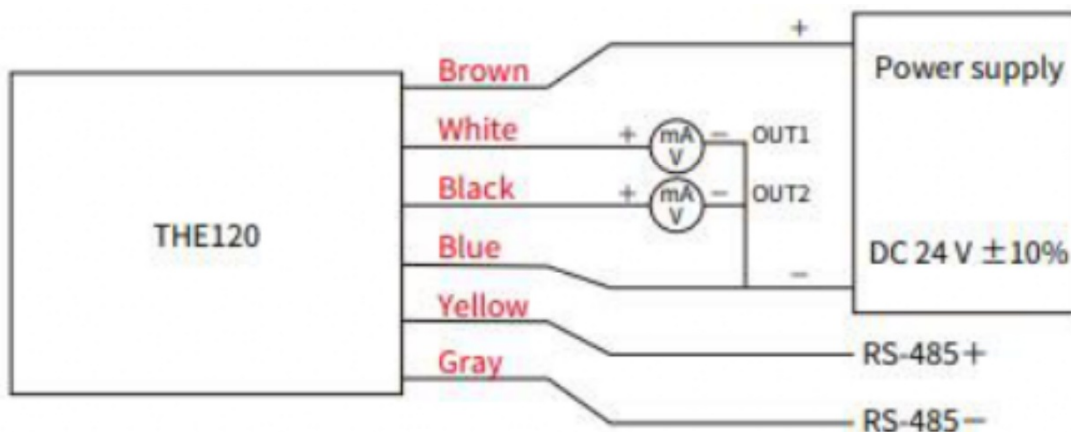
eYc-tech will not bear any responsibility for the results produced by the operators !

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.

Connection Diagram



RS-485 and Modbus

THE120 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.

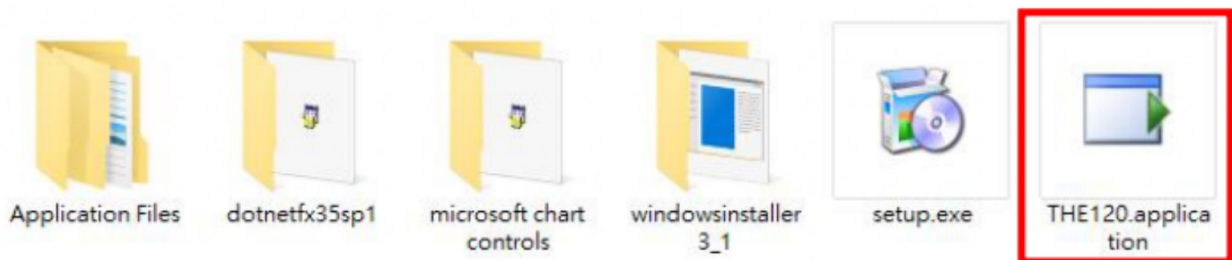
Technical Data:

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

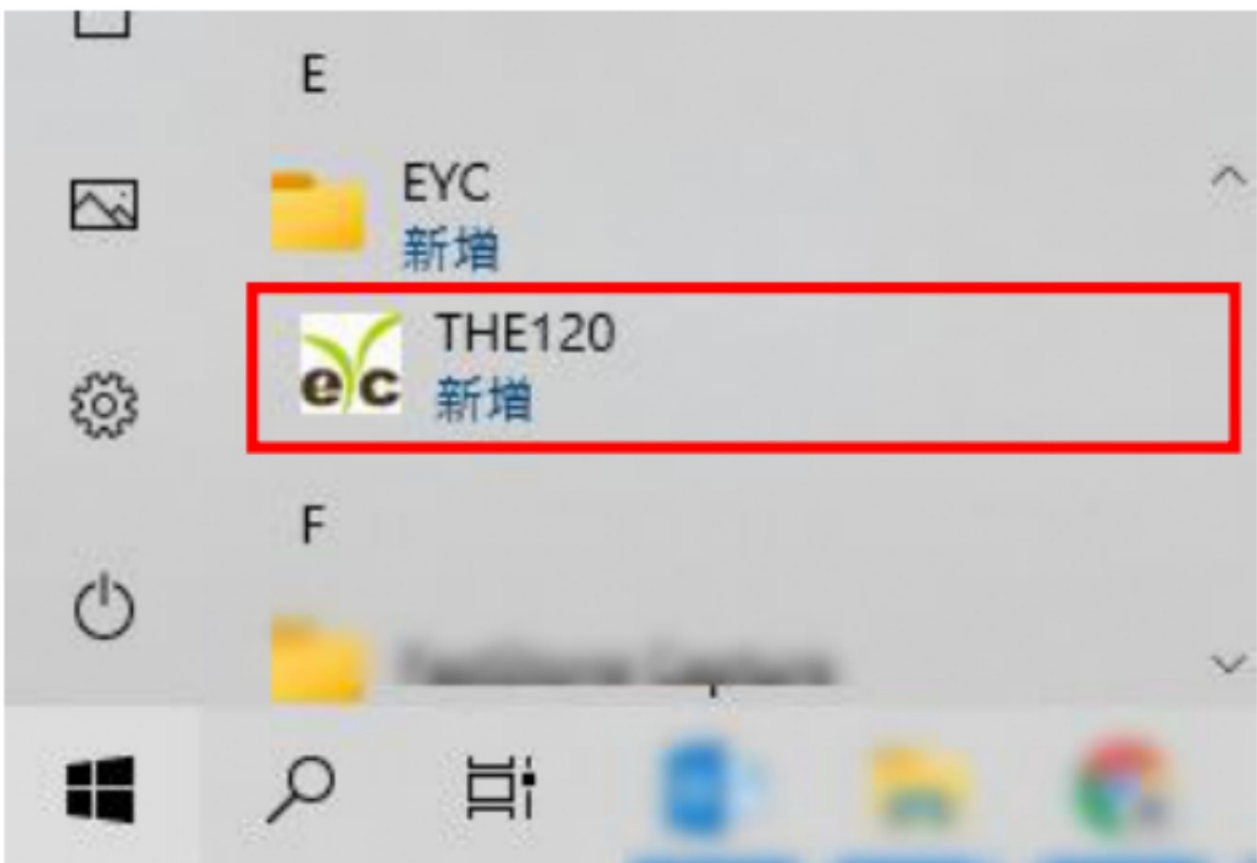
5. Parity: None, Even, Odd
6. Data length: 8 bit
7. Stop bit: 1 or 2 bit
8. Factory default Station address = 1, Data format= 9600, N81

Software and calibration operation step

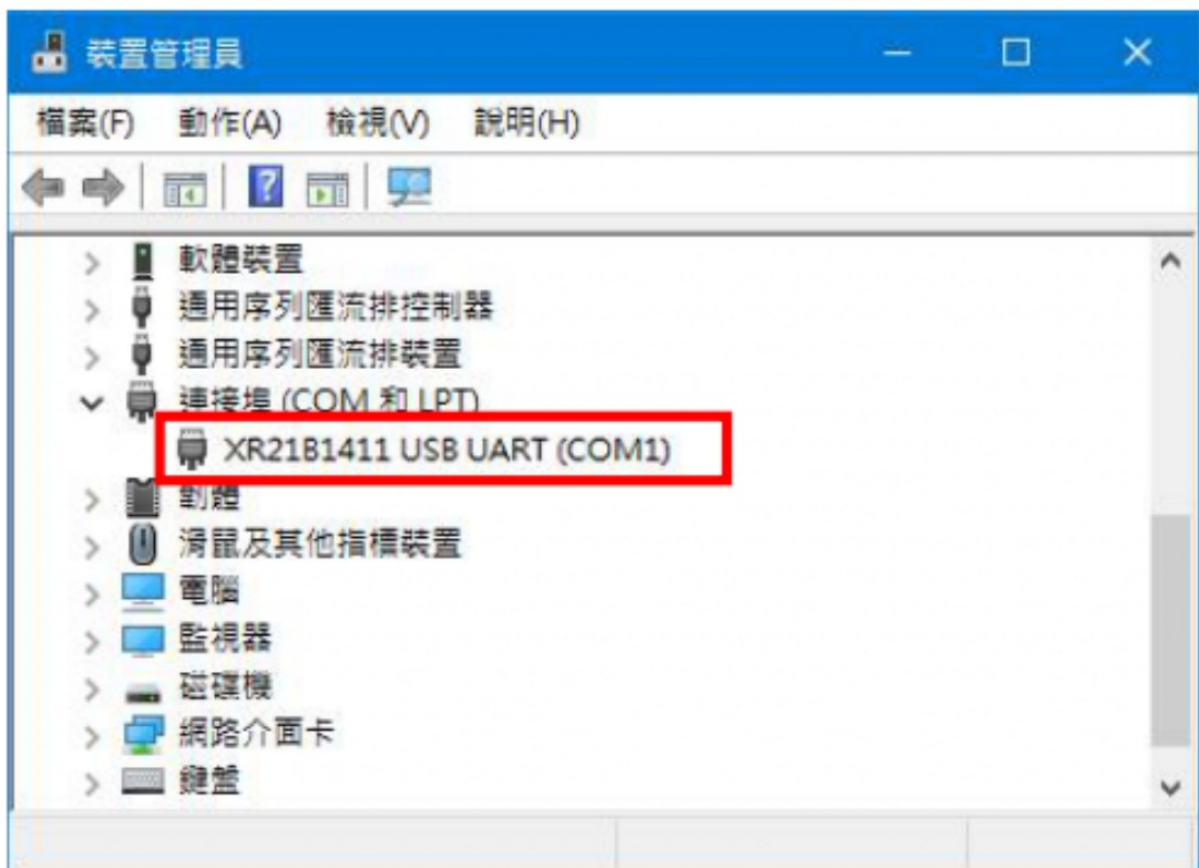
1. Portable application: eYc-THE120-UI-20211020-1.0.0 (EXE)
2. Installation program: eYc-THE120-UI-20211020-1.0.0 (INSTALLER).rar
(3% Please contact us to download installation program when free program doesn't execute.)
 - a. Operating System requirements: above Windows XP SP2
 - b. Decompress installation program and click Setup to install



- c. Navigate to program and click THE120

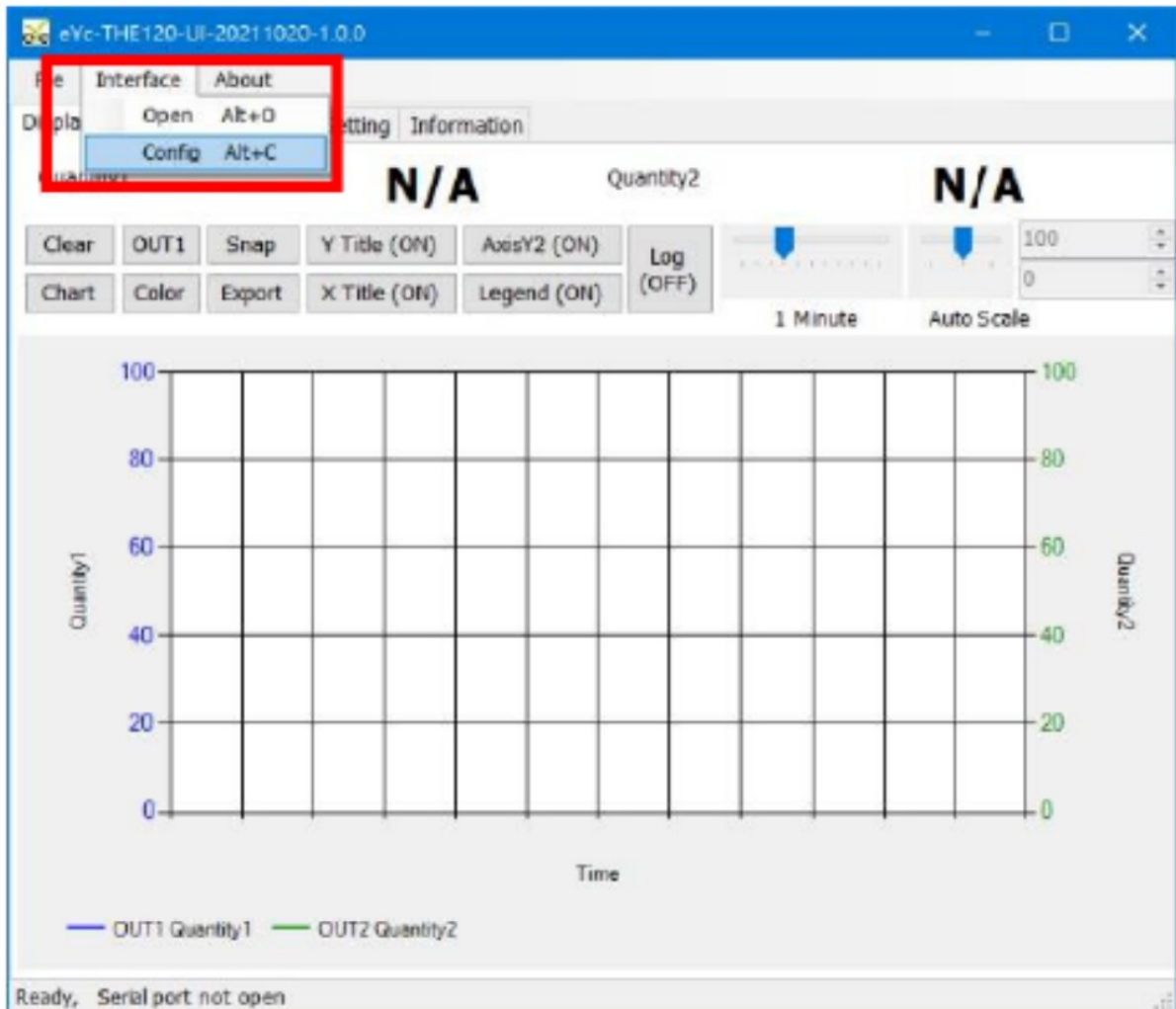


1. Hardware connection: Connect the THE120 to PC through USB to RS-485 converter
2. Check the COM port number from Device Manager in Computer Management. e.g. COM11 in illustration



3. Open the THE120 UI

1. Goto function **Interface**
2. Click **Config**



4. Connection method – If known station number ID:

1. Setting **COM PORT**
2. Setting **BAUD RATE**
3. Setting **DATA FRAME**
4. Setting **Station ID**
5. Click **Apply** for connection

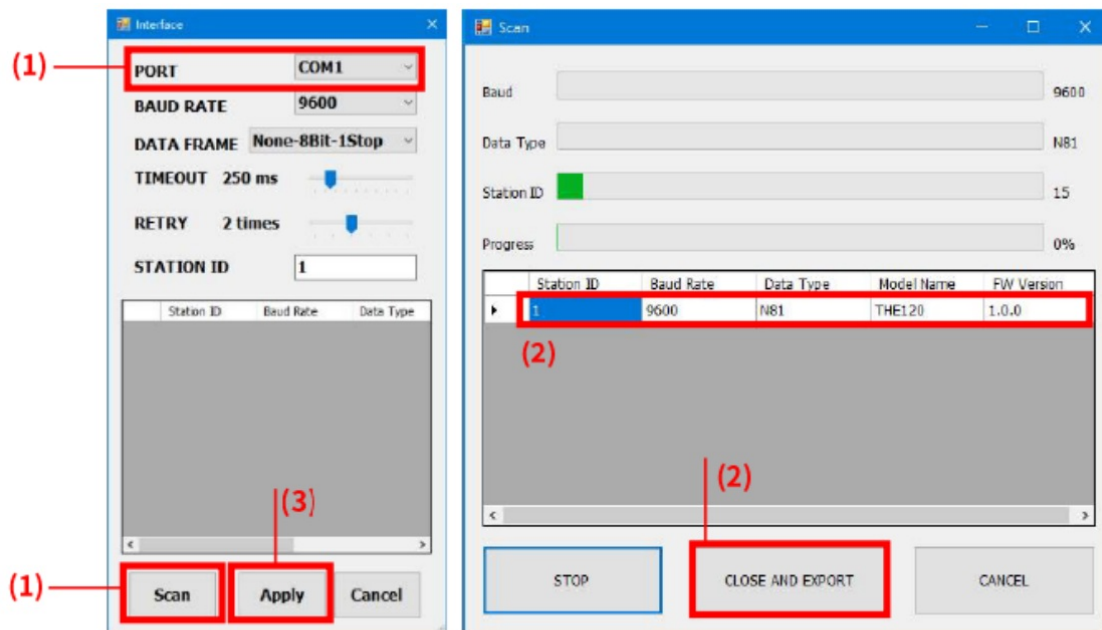
The screenshot shows a software window titled "Interface" with a close button (X) in the top right corner. The window contains several configuration fields:

- PORT:** A dropdown menu showing "COM1".
- BAUD RATE:** A dropdown menu showing "9600".
- DATA FRAME:** A dropdown menu showing "None-8Bit-1Stop".
- TIMEOUT:** A label "250 ms" next to a slider control.
- RETRY:** A label "2 times" next to a slider control.
- STATION ID:** A text input field containing the number "1".

Below these fields is a table with three columns: "Station ID", "Baud Rate", and "Data Type". The table is currently empty. At the bottom of the window are three buttons: "Scan", "Apply", and "Cancel". The "Apply" button is highlighted with a red rectangular box.

5. Connection Method-If unknown station number **ID** (Scan R485):

1. Setting **COM PORT**, click Scan for scan devices
2. Choose the device and click **Close** and **Export**
3. Click **Apply** for connection



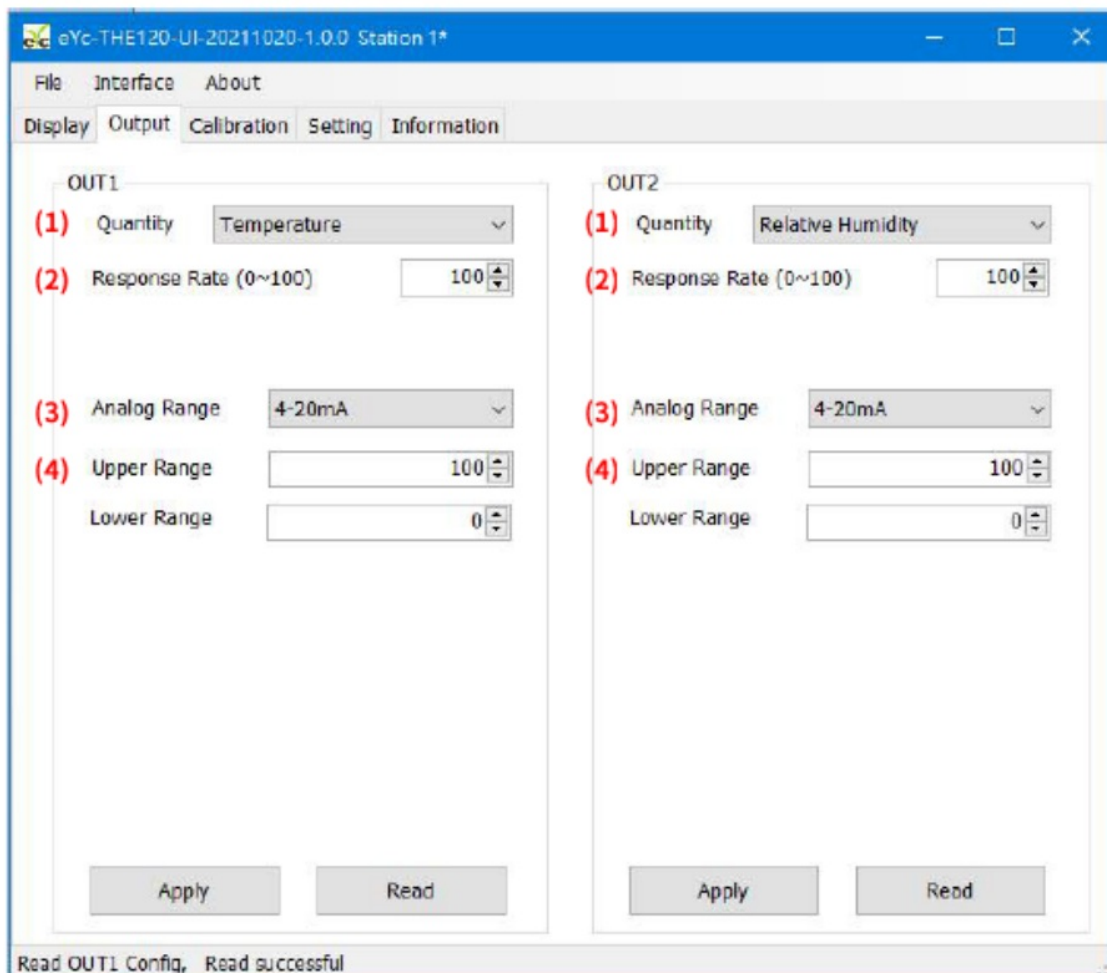
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6. Setting on analog output

In **Output** tab, OUT1/OUT2 group, the output related setting could be found:

1. **Quantity** : Temperature, Relative Humidity
2. Response rate (0 ... 100) 100 : Filter OFF » 90 : Filter =60 sec. » 80 : Filter =120 sec., etc.
3. **Analogtype**: 4...20 mA (Current) /0... 10V (Voltage)\
4. **Measuring range**: Upper and Lower



7. Setting Environment, **Modbus Protocol**

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

Environment :










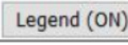

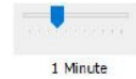

1. Air Pressure (mBar)

Modbus Protocol :

The screenshot shows the 'Setting' tab of the eYc-THE120-UI-20211020-1.0.0 Station 1* application. The 'Environment' section contains a single item: (1) Air Pressure (mBar) with a value of 1013.25. The 'Modbus Protocol' section contains four items: (2) Station ID (1), (3) Baud Rate (9600), (4) Data Frame (None-8Bit-1Stop), and (5) Echo Test (OFF). There is also a (6) Reset Counter button. At the bottom of the settings area are 'Apply' and 'Read' buttons. The status bar at the very bottom indicates 'Read OUT1 Config, Read successful'.

2. Station ID
 3. Baud Rate
 4. Data Frame
 5. Modbus Echo Test Enable / Disable
 6. Modbus Echo Test Result Reset
8. Data display and logging

The screenshot shows the 'Display' tab of the eYc-THE120-UI-20211020-1.0.0 Station 1* application. The main display area shows Temperature °C as 25.20 and Relative Humidity %rH as 57.57. Below the display are buttons for Clear, OUT1, Snap, Y Title (ON), AxisY2 (ON), Log (OFF), Chart, Color, Export, X Title (ON), and Legend (ON). There are also two vertical sliders for 1 Minute and Auto Scale, with values 30 and 0 respectively.

	Clear the chart records		Save the data measuring when the system start connecting before clicking the Export icon (File format .CVS)
	Change the chart style (5 types)		Display / Hide the statement of Y axis (Temperature / Humidity)
	Select the OUTPUT channel		Display / Hide the statement of X axis
	Set line color chosen from OUTPUT		Display / Hide the statement of Y axis (Unit: °C/%RH)
	Snap chart		Display / Hide the statement of chart
	Display / Hide the measuring data (File format .CVS)		
 1 Minute		Adjust time range of X axis	
 Auto Scale		Adjust scale range of Y axis	

9. Device Information

eYc-THE120-UI-20211020-1.0.0 Station 1*

File Interface About

Display Output Calibration Setting **Information**

(1) Serial Number

(2) Model Name

(3) Firmware Version (7) Firmware Checksum

(4) RS-485

(5) Temperature Range (°C)

(6) RH Calibration Date (8) HW, ASM Version

	RH Calib Data	Upper Point	Lower Point	DAC Near Full Scale	Voltage (V)	Current (mA)
(9) Humidity (%)	79.28	19.94		(11) OUT1	0.000	20.230
Sensor Period	3980103	3679380		OUT2	0.000	0.000
Sensor Tadc	23347	23283				
(10) Temperature (°C)	100.00	0.00		(12) OUT1 SPAN	0~100	
Sensor Tadc	33986	20026		OUT2 SPAN	0~100	

Read OUT1 Config, Read successful

1. Serial number
2. Model name
3. Firmware version
4. RS-485
5. Temperature range(°C)

6. Calibration date
7. Firmware checksum
8. Hardware version
9. Humidity calibration data
10. Temperature calibration data
11. Analog output calibration data
12. Analog output programming span

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, and clean the cover. Set the period between inspections based on atmospheric dust and other contaminants in the installation environment.

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	Clack 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 onthe pr oduct • Check installed location • Check installed angle • Check dust and contamination o n the sensor 	<ul style="list-style-type: none"> • Remove the sensor and filter. Dr y power-off state sensor in clean air seasoning • Refer to the section ® Align mea surement head with flow directio n • Cleaning the filter • Changing the filter • Calibrate • Replace the sensor

Temperature & Humidity / Dew Point / Air Velocity & Volume / Flow
Differential Pressure / Air Quality
Measuring Specialist

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Documents / Resources

 Operation Manual eyc THE120 COH Temperature and Humidity Transmitter 	eyc-tech THE120 Relative Humidity Sensor [pdf] User Manual THE120 Relative Humidity Sensor, THE120, Relative Humidity Sensor, Humidity Sensor
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Manuals+.