Pyxis®

UC-100A Display & Data Logging Terminal

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CUSTOM MANUAL

Related Statements

The manufacturer shall not be liable for direct, indirect, special, incidental or consequential damages resulting from any deficiency or omission in this manual. The manufacturer reserves the right to make changes to this manual and the products described in it at any time without notice or liability. Revised versions can be found on the manufacturer's website.

Safety Information

Please read this manual completely before unpacking, installing and operating this equipment. In particular, pay attention to all dangers, warnings and precautions, otherwise, it may cause serious personal injury to the operator or damage to the equipment.

Use of Danger Information

Danger
Indicates a potentially or urgent dangerous situation that, if not avoided, will cause death or serious injury.

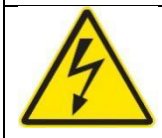
Warning
Indicates a potentially or very dangerous situation that, if not avoided, may cause serious personal injury or death.

Warning
Indicates a potentially dangerous situation that may cause a certain degree of personal injury.

Attention
Indicates conditions that if not avoided, will cause damage to the instrument. This is information that needs special emphasis.

Warning Label

Please read all labels and marks attached to the instrument. Failure to follow the instructions on these safety labels may result in personal injury or damage to the instrument.

	If this symbol appears in the instrument, it means refer to the operation and/or safety information in the instruction manual.
	If there is this mark on the instrument housing or insulator, it means there is a risk of electric shock or death from electric shock.
	Static electricity can damage the delicate internal electronic components, resulting in reduced performance or eventual failure of the instrument.
	Electrical equipment marked with this symbol cannot be disposed of through the European public waste system after August 12, 2005. In order to comply with European regional and national regulations (EU Directive 2002 / 98 / EC), European electrical equipment users must now return abandoned or expired equipment to the manufacturer for disposal without any cost.

Pyxis

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1. Specifications

Items	LT-736
Part Number	53215
Turbidity Range	0-10/10-1000NTU
Measurement accuracy	±0.02 NTU or ±2%
Resolution	±0.001 NTU or ±1%
Light Source (LED)	Warm white light (3200K), in compliance with USEPA180.1 standard
Outputs	4–20mA Analog Output, RS-485 Digital Output with Modbus protoco
Power Supply	22–24 VDC, 2 W
Dimension (L × Dia)	7.4 × 1.44 inch (189 × 36.6 mm)
Material	304 Stainless Steel
Operational Pressure	≤6.9Bar（100psi）
Operational Temperature	32–122°F (0–50 °C)
Enclosure Rating	IP67
Regulation	CE & RoHS

Items	ST-710SS
Part Number	53030
pH Range	0.00–14.00 *With Automatic Temperature Compensation*
Precision	±0.01 pH unit or 1% of the value
Response Time	95% within 5 seconds
Power Supply	22–26V DC, Power Consumption 2W
Storage Temperature	-7–60 °C (20–140 °F)
Outputs	Isolated 4–20 mA Analog Output & isolated RS-485 Digital Output
Dimension (L × W × H)	Length 6.8 inch (172.7 mm), body diameter 1.44 Inch (36.6 mm)
Installation	ST-001 Inline Tee (provided) 3/4” FNPT Glue & Thread
Body Material	304 stainless steel
Weight	530 g (1.16 lbs)
Operational Pressure	100 psi (6.9 bar)
Operating Temperature	4–40 °C (40–104 °F)
Wet Material	Quartz & UPVC
Rating	IP67, Fully Dustproof & Waterproof
Regulation	CE Marked
Cable Included	MA-4.9CR Cable (8Pin Male/Female Adapters — 4.9ft) MA-1.5CR Cable (8 Pin Male Adapter / Flying Leads — 4.9ft) *Additional Extension Cables Available*
Typical Service Life	2 years

Item	ST-724
P/N	10009
Conductivity Range µS/cm	0.00 - 1,000.0
Conductivity Precision	± 0.2 µS/cm or ±1% *(<500 µS)* ± 2% *(>500 µS)*
4-20mA Range for Temp	32 - 212 °F (0 - 100 °C)
Temperature Precision	±1% of the value
Cell Constant (K)	0.3
Response	T90 = 92 Sec.
Sample Pressure	Up to 100 psi (0.7 MPa)
Power Supply	22 – 26V DC, Power Consumption 2W
Dimension (L x W x H)	Length 8.46 inch (215 mm), body diameter 1.32 Inch (33.6 mm)
Installation	¾" NPT or Pyxis ST-001 or ST-007 Inline Tee Assemblies
Body Material	304 stainless steel
Weight	530 g (1.10 lbs)
Operational Pressure	100 psi (6.9 Bar)
Operating Temperature	40 - 120 °F (4 - 49 °C)
Storage Temperature	20 - 140 °F (-7 - 60 °C)
Outputs	8Pin - Isolated Dual 4 – 20 mA Analog Output & Isolated RS-485 Digital Output
Wet Material	HASTELLOY
Rating	IP67, Fully Dustproof & Waterproof
Regulation	CE, UKCA, RoHS Marked
Cable Length	5 ft (1.5 m) [§] - (Extension Cables Available)

Item	UC-100A
P/N	43054
Display	7-inch LCD Color Industrial Capacitive Touch Screen
Storage Capacity	Built-In 4GB of Ram for Storing up to 1-Million Data/Event Records
Power Requirement	96-260VAC / 50-60 Hz; 3A Fuse; 60 W
USB	1 x USB host, for data downloading and screen upgrade
Internet	RJ-45 socket, Modbus-TCP
Rating	IP-65 Panel-Display
Relative Humidity	20% - 90% (No Condensation)
Altitude	<6,561 feet (<2,000 Meter)
Dimensions (HxWxD)	(UC-100A) 280H x 380W x 200D mm
Weight	UC-100A ~ 5 kg

NOTE *- Pyxis Lab is consistently updating technologies, as such, specifications may change without notice.*

Contact info@pyxis-lab.com for details or www.pyxis-lab.com .

2. UC-100A Installation and Connection

2.1. UC-100A Installation requirements

Power supply: 100~240V AC 50/60Hz all the way;

Equipment installation: on-site wall-mounted installation of monitoring device;flatness of wall surface is less than 0.5cm/m^2;

Equipment weight: 5kg, fixed by expansion screws on the wall;

At least 0.5m operation space is reserved around the equipment installation;

3G/4G network signal: The 3G/4G network signal in the equipment installation area is normal, and the mobile phone on site can receive calls and surf the Internet normally.

2.2. UC-100A & Inline Sensor Equipment installation

It is recommended that the UC-100A be installed on a solid wall for easy installation and maintenance. Punch holes and prepare expansion screws before installation.The dimensions given may vary slightly depending on the location of the installation.

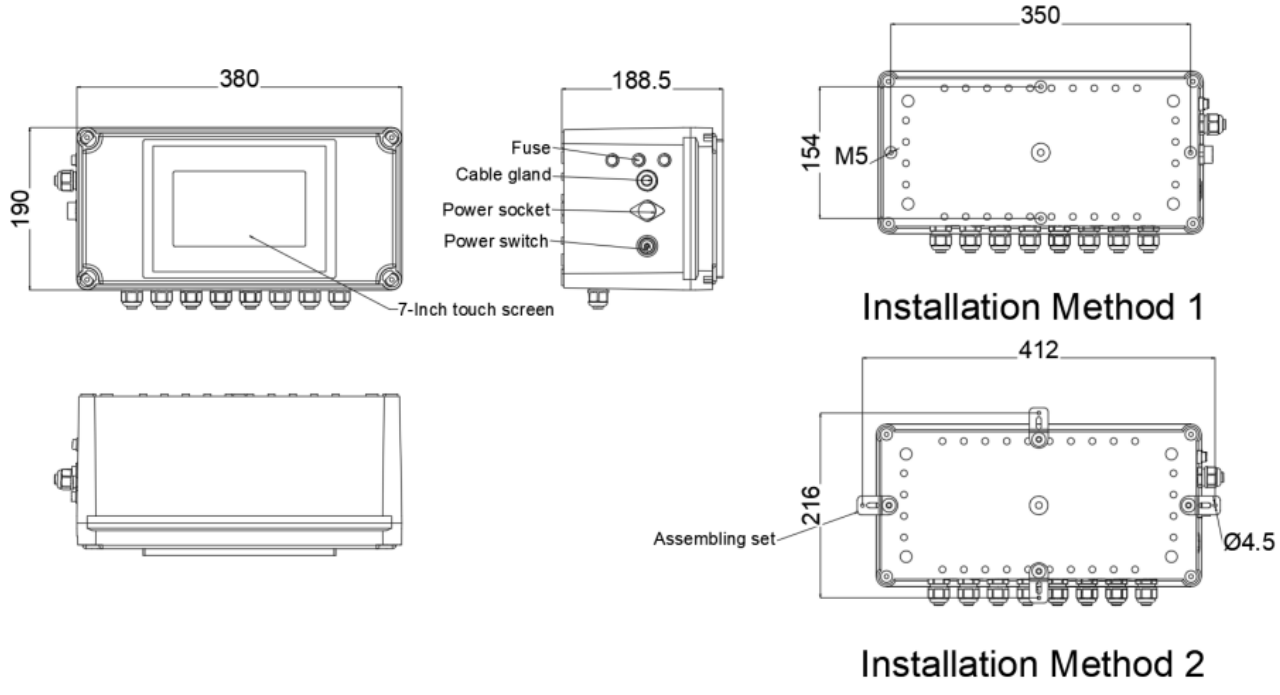


Figure. 1 - UC-100A Installation Dimensions

2.3. LT-736 Sensor (mm)

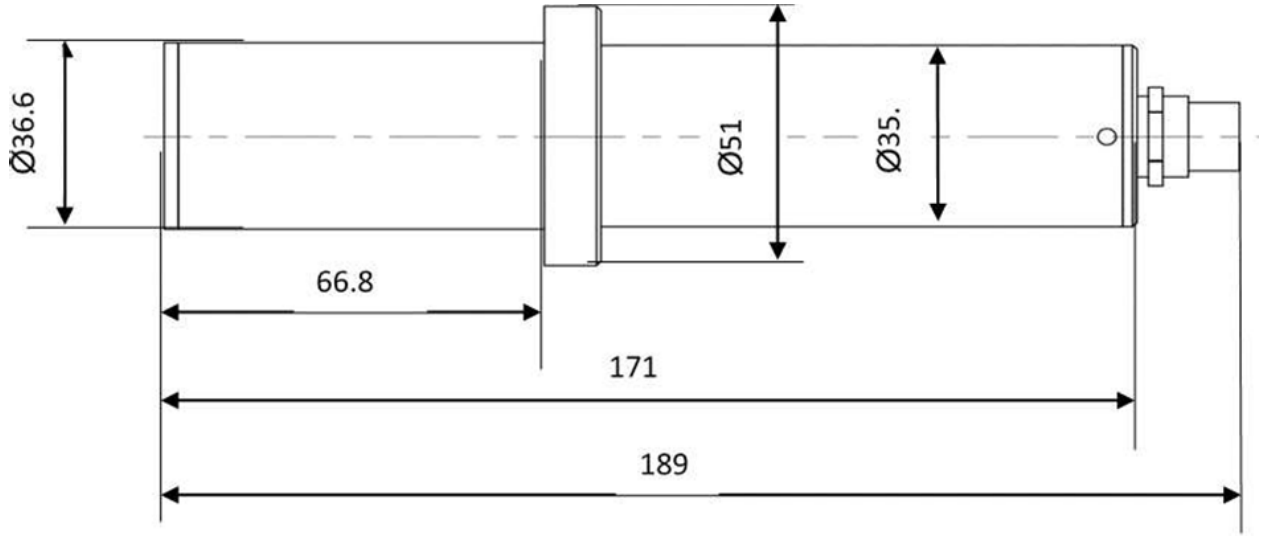


Figure. 2 - LT-736

2.4. ST-710SS Sensor (mm)

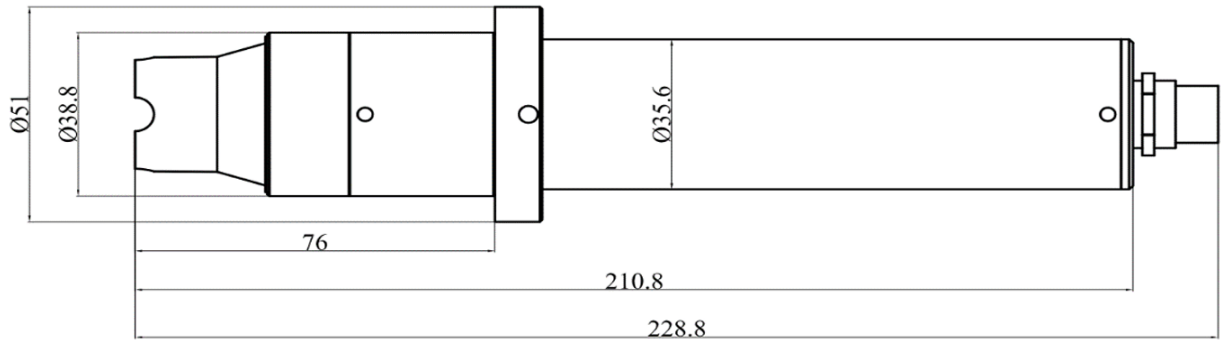


Figure. 3 - ST-710SS

2.5. ST-724 Sensor (mm)

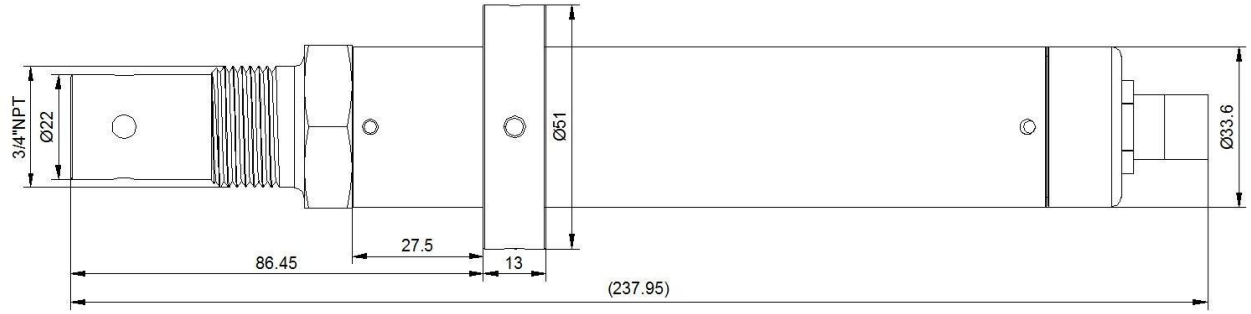


Figure. 4 - ST-724

2.6. UC-100A Electrical Connection

The Integrated Water Analyzer analyzer has universal AC power supply equipment allowing users simply to plug the power supply into a 100~240V AC 50/60Hz power outlet for normal operation.

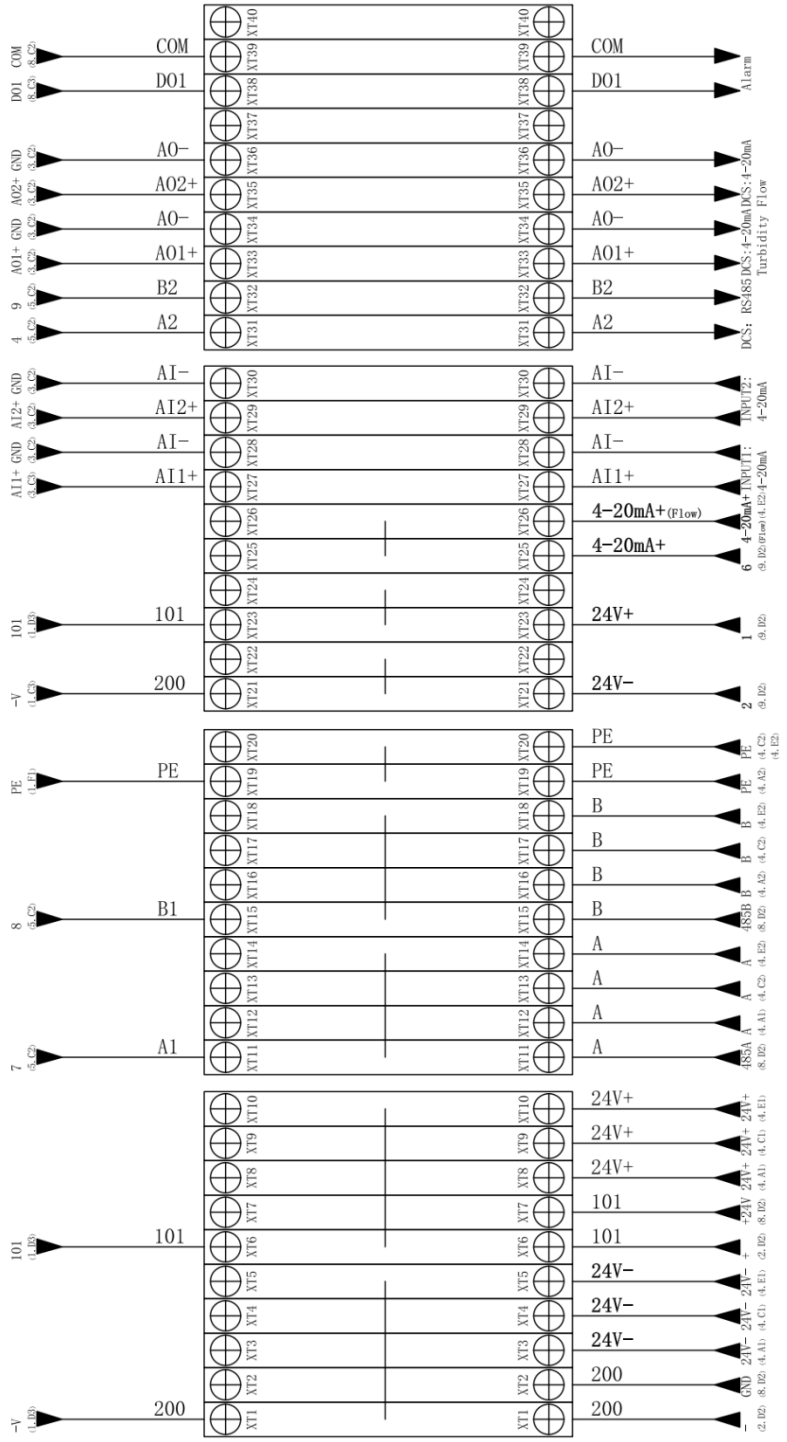


Figure. 5 - UC-100A Terminal Board

3. Touch Screen Operation

3.1. Main Screen

After the system is powered on an initial screen allows the user to log into the system.

Figure. 6 - Main Screen

3.2. User Login

After powering on the system, log in with the user name and password to be able to change system settings. Click the "User Login" button, select the user "pyxis", enter the password: "888888" in the user password field. A new user can be added via "User Management" in interface of the menu.

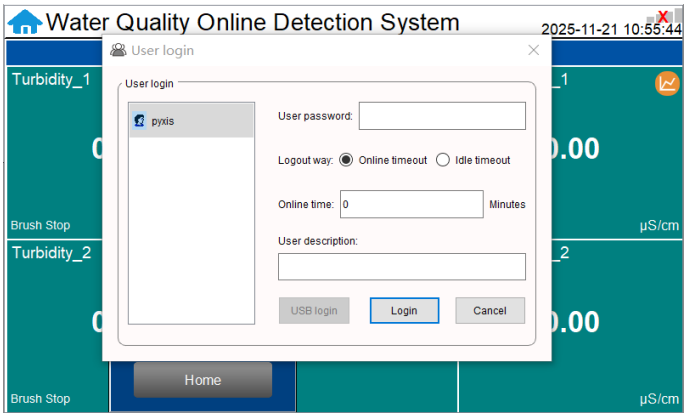


Figure. 7 - User Login Screen

If you do not need a password, or want to change the user, you can enter the system and "Manage" in the "User Management" screen of the menu.

3.3. Real-Time Monitoring

Click the "Enter System" button on the main interface to enter the real-time monitoring screen of the system. The data detected by the Pyxis sensors will be displayed in real-time.

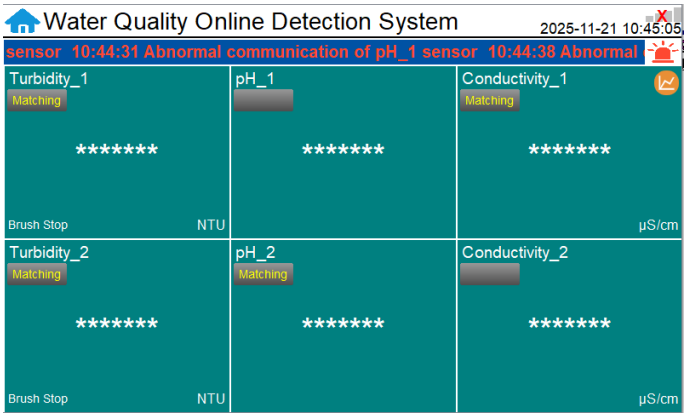


Figure. 8 - Real-time monitoring screen

When sensors are connected for the first time, they need to be matched one by one. Ensure that the sensor model is the same as the sensor model on the screen. Otherwise, the matching will fail. First connect the sensor, click **"Matching"** on the screen, wait for the match to succeed. Then connect another sensor, click **"Matching"**, wait for the match to succeed.

NOTE* When "*****" appears on the interface, it means that the sensor is abnormal or the communication fails.*

After replacing the new sensor and confirming the connection, click "Matching" in the upper left corner of the corresponding interface, and you will be prompted to confirm the connection again. After clicking "Confirm", the system will start to match the sensors and wait for the matching to complete.

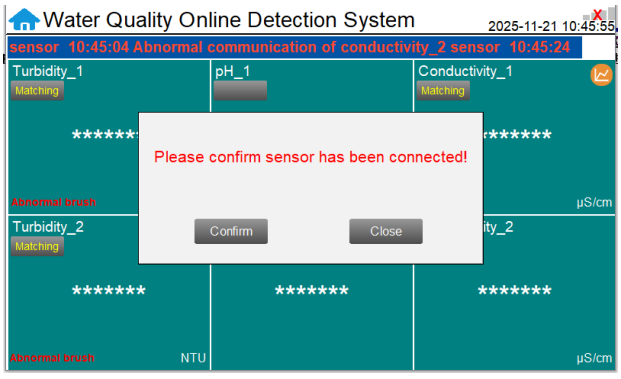


Figure. 9 - Matching confirmation

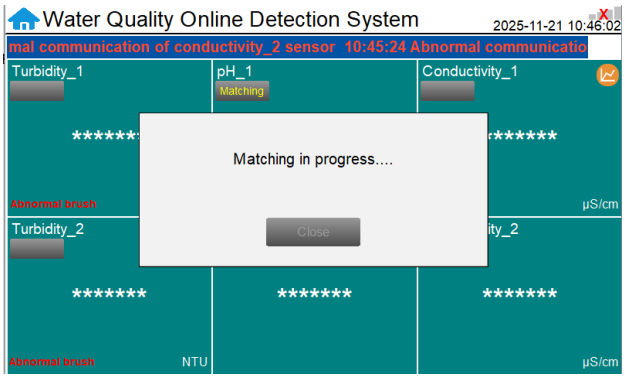


Figure. 10 - Matching In Progress

If the interface shows a matching timeout, please check whether the sensor is properly connected to the controller or whether the sensor register address is correct.

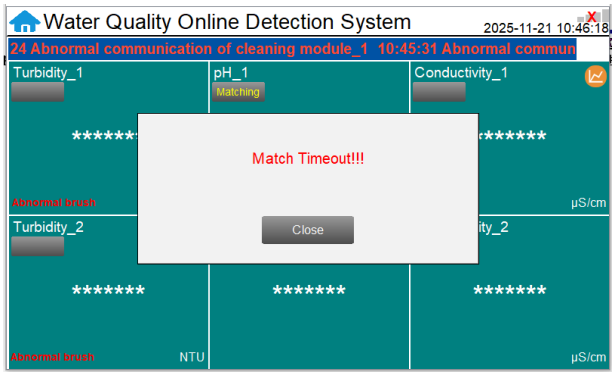


Figure. 11 - Match Timeout

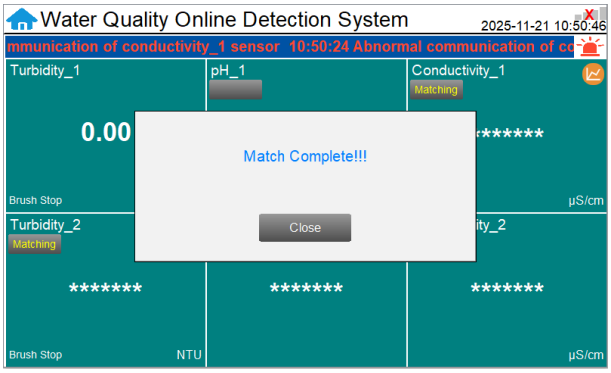


Figure. 12 - Match Complete

The LT-736 turbidity sensor can be optionally equipped with a brush module, and the matching steps are the same as the above approach.

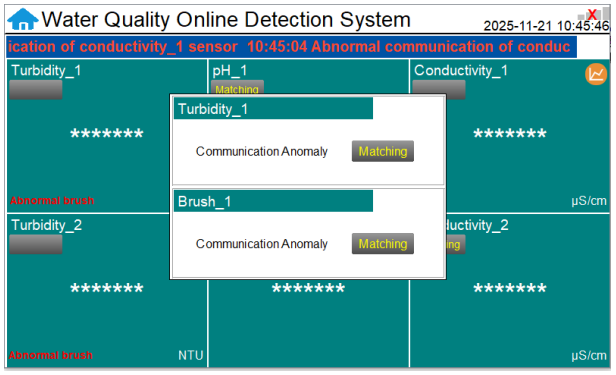


Figure. 13 - Brush matching interface

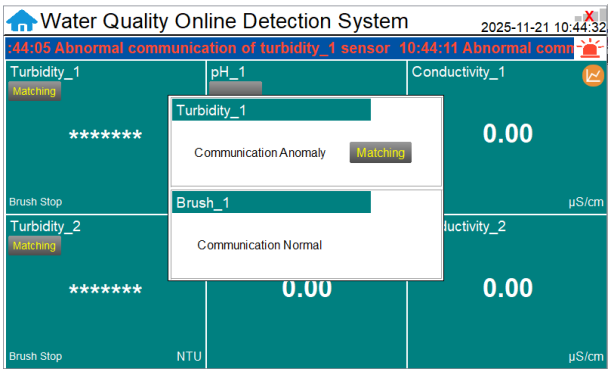


Figure. 14 - Successful Matching of Brush

After the sensor is successfully matched, the data detected by the Pyxis sensors will be displayed in real-time.

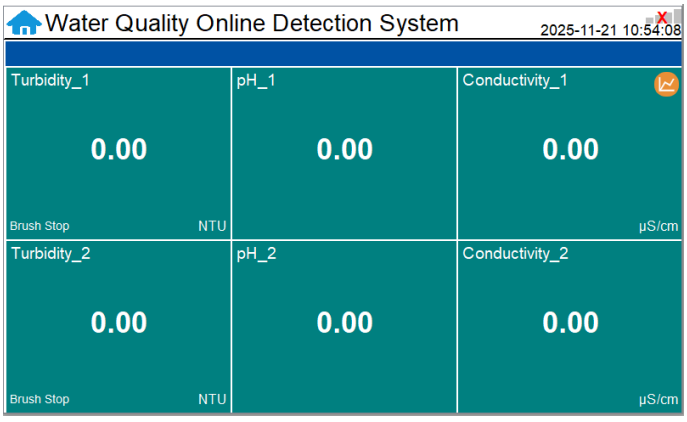


Figure. 15 - Real-time monitoring screen

Click on the time in the upper right corner, the screen pops up the time setting window.

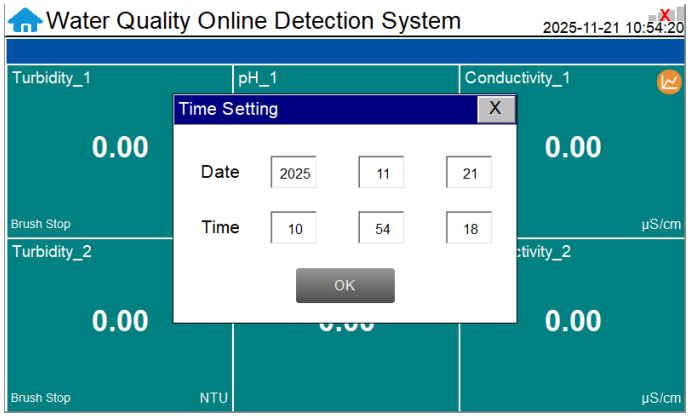


Figure. 16 - Time Setting

Click the orange tilde icon located in the lower-right corner to access the real-time curve interface.

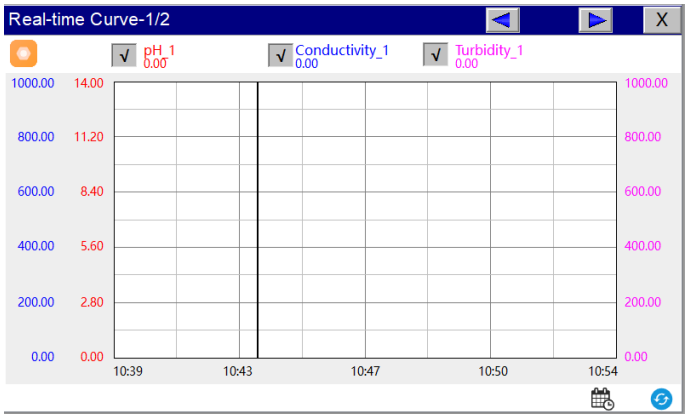


Figure. 17 - Real-time Curve

Click the refresh icon in the bottom-right corner, the icon turns blue and the real-time curve stops refreshing. Click again to restore it.

By clicking the calendar icon in the bottom-right corner, users can set the parameters of the X-axis.

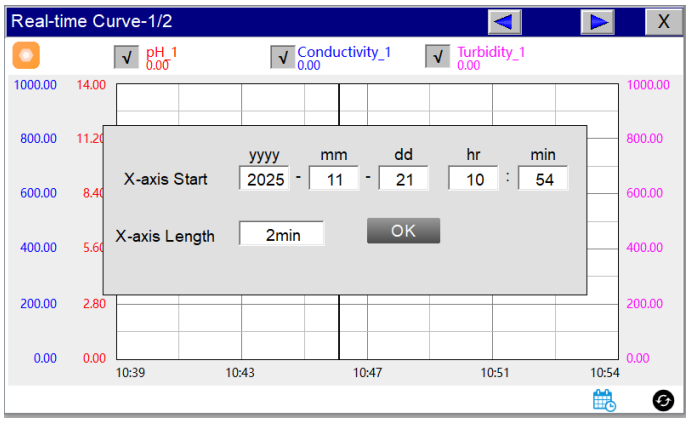


Figure. 18 - X-axis Range

By clicking the orange icon in the top-left corner, the user can set the parameters of the Y-axis.

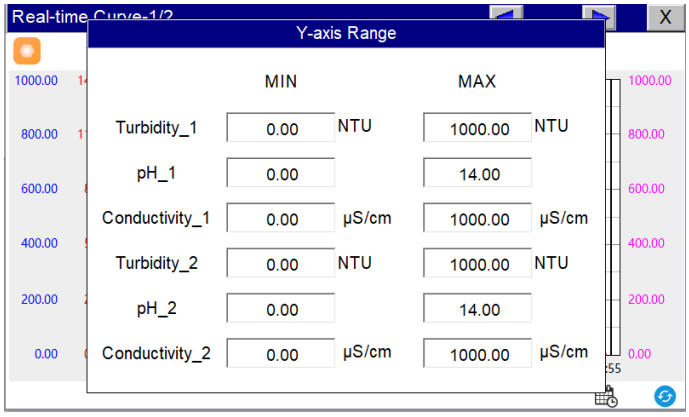


Figure. 19 - Y-axis Range

3.4. Menu Bar

Click the button in the upper left corner of the screen to enter the system's menu interface, where the user can select to enter the desired operation interface.

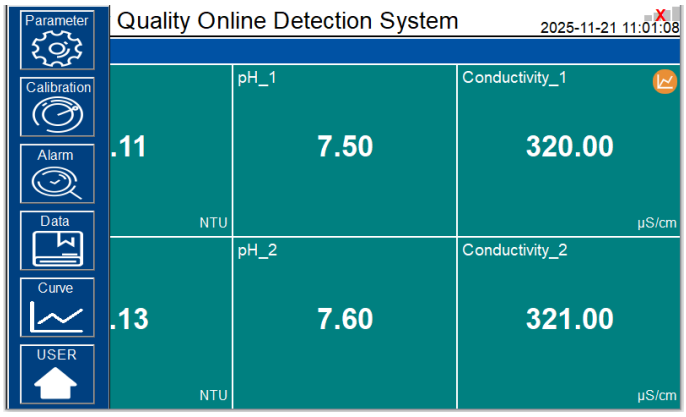


Figure. 20 - Menu Bar

3.5. Configurable Parameters

Click the "Parameter" button in the menu bar. Here you can select a list of options to include enter **Alarm Parameters / Name Definition / Cleaning Parameters /Information Service/ Comm Setup**.

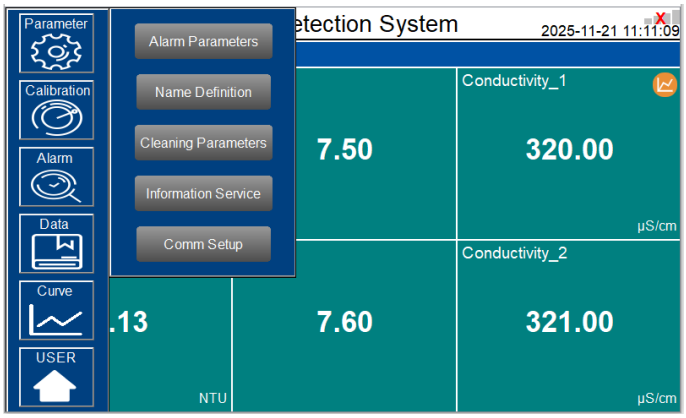


Figure. 21 - Parameter

3.5.1. Alarm Parameters

Users can set the upper and lower alarm limits. Click "Alarm Parameters" to enter the alarm parameter settings. When the measured sensor value is lower than the set lower limit (the XX lower limit alarm) or when the measured value is higher than the set upper limit (the XX upper limit alarm), the corresponding sensor alarm will be displayed on the real-time monitoring screen. The user can also choose to turn the alarm display on or off at the top right of the corresponding parameter list.

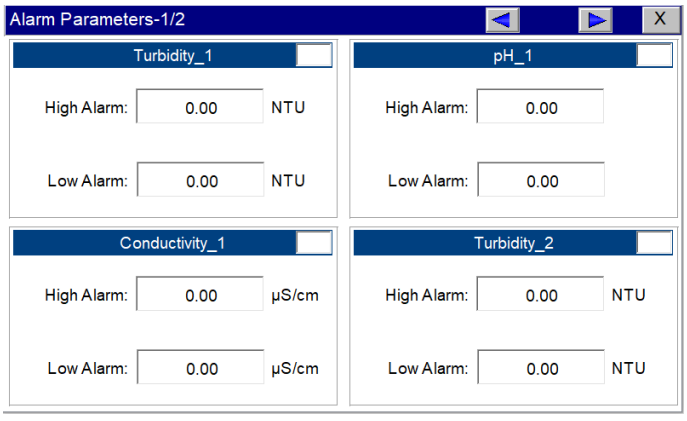


Figure. 22 - Alarm Parameters Setting

3.5.2. Name Definition

Click the orange dialog box to customize the sensor name.

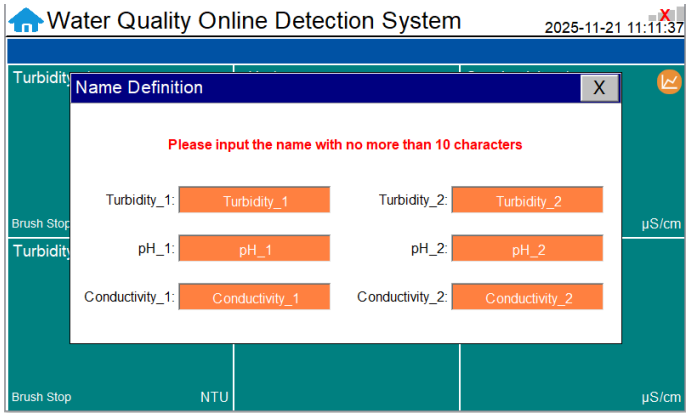


Figure. 23 - Name Definition

3.5.3. Cleaning Parameters

The UC-100A supports users to manually control the start and stop of the brush. Before enabling the parameter control function, it is necessary to ensure that the brush module has been installed on the device.

Brush operation be programmed to AUTO or MANUAL mode based on need.On the parameter setting interface, users can set the automatic cleaning cycle time frequency (minutes) and brush rotations per cleaning.

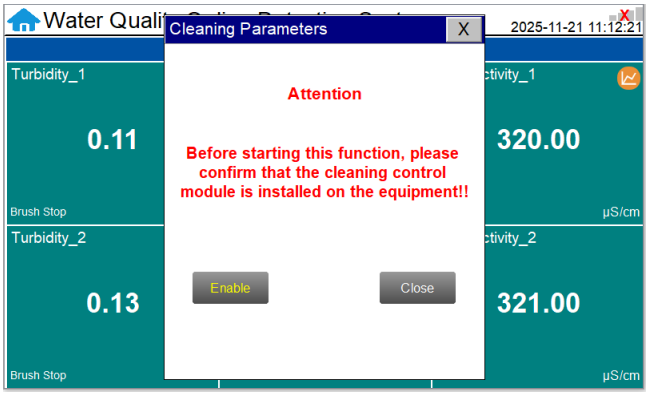


Figure. 24 - Attention

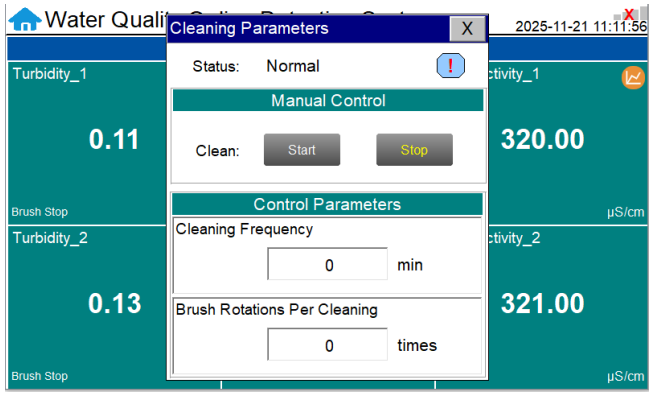


Figure. 25 – Cleaning Parameters

3.5.4. Information Service

Clicking on **"Information Service "** opens a sub-menu for **Diagnostic Parameters** , **IO Monitoring** , **Terminal Definition** and **IoT info**.

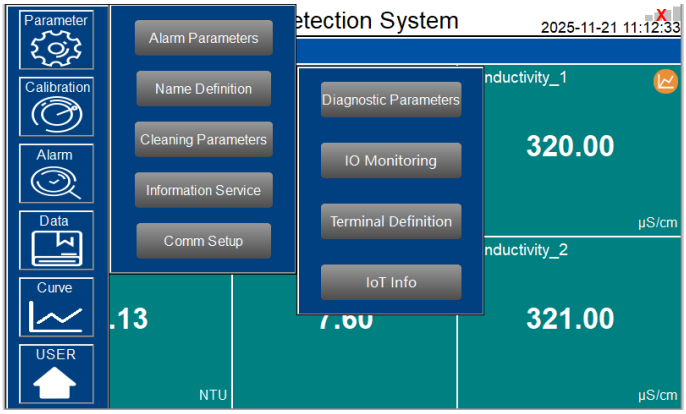


Figure. 26 - Information Service

Diagnostic Parameters

Click “Diagnosis Parameters” to the diagnosis page. In the diagnosis page, the raw data measured by the sensor is displayed. To help troubleshooting possible issues with the sensor, please save an image of this data when the sensor is placed in a clean water (tap water or deionized water), in a standard, and in the sample that the sensor is intended for.

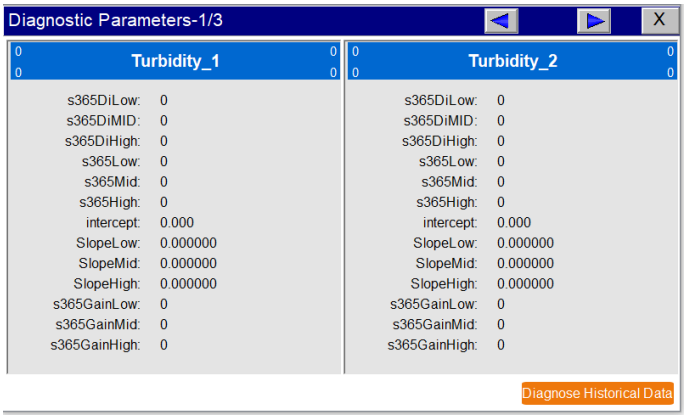


Figure. 27 - Diagnostic Parameters

Click on **“Diagnostic History Data”** in the lower right corner to access to view previous diagnostic parameters. Data can also be exported and made available for support from the Pyxis Lab Service Department.

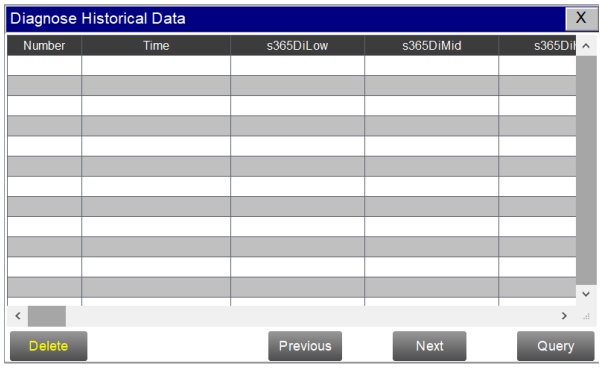


Figure. 28 - Diagnostic History Data

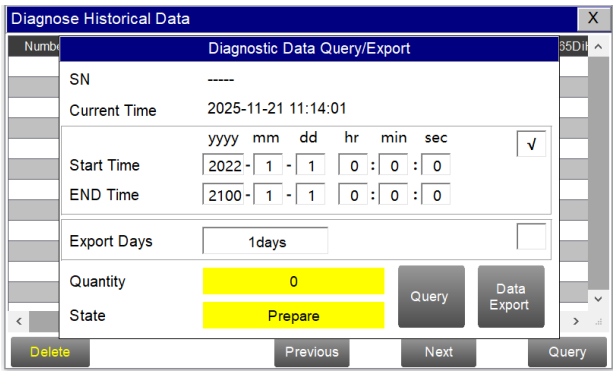


Figure. 29 - Diagnostic History Data Query

IO Monitoring

This interface enables users to monitor the operational status associated with the IO ports.

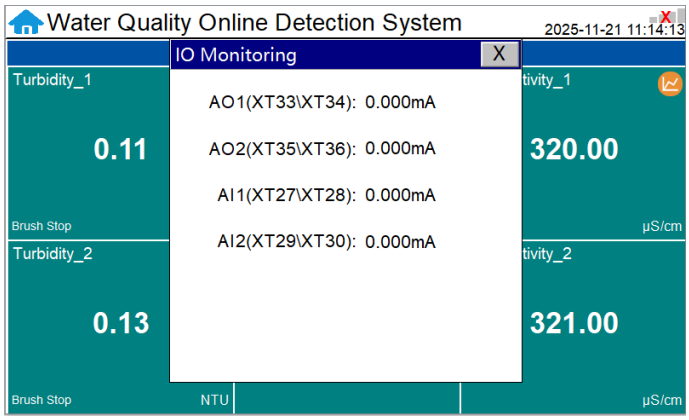


Figure. 30 - IO Monitoring

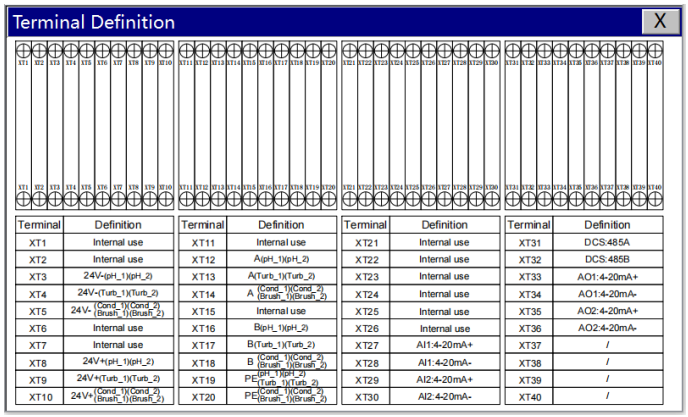
The corresponding table of names and parameters is presented below.

Name	Parameter
AO1(XT33\XT34)	Turbidity
AO2(XT35\XT36)	Flow
AI1(XT27\XT28)	Input1
AI2(XT29\XT30)	Input2

Terminal Definition

This interface shows the terminal definitions of the terminal block.

Clicking on the corresponding position can display the table defined by the corresponding terminal block.



Terminal	Definition	Terminal	Definition	Terminal	Definition	Terminal	Definition
XT1	Internal use	XT11	Internal use	XT21	Internal use	XT31	DCS:485A
XT2	Internal use	XT12	A(pH_1)(pH_2)	XT22	Internal use	XT32	DCS:485B
XT3	24V-(pH_1)(pH_2)	XT13	A(Turb_1)(Turb_2)	XT23	Internal use	XT33	AO1:4-20mA+
XT4	24V-(Turb_1)(Turb_2)	XT14	A (Cond_1)(Cond_2) (Brush_1)(Brush_2)	XT24	Internal use	XT34	AO1:4-20mA-
XT5	24V- (Cond_1)(Cond_2) (Brush_1)(Brush_2)	XT15	Internal use	XT25	Internal use	XT35	AO2:4-20mA+
XT6	Internal use	XT16	B(pH_1)(pH_2)	XT26	Internal use	XT36	AO2:4-20mA-
XT7	Internal use	XT17	B(Turb_1)(Turb_2)	XT27	AI1:4-20mA+	XT37	/
XT8	24V+(pH_1)(pH_2)	XT18	B (Cond_1)(Cond_2) (Brush_1)(Brush_2)	XT28	AI1:4-20mA-	XT38	/
XT9	24V+(Turb_1)(Turb_2)	XT19	PE (pH_1)(pH_2) (Turb_1)(Turb_2)	XT29	AI2:4-20mA+	XT39	/
XT10	24V+ (Cond_1)(Cond_2) (Brush_1)(Brush_2)	XT20	PE (Cond_1)(Cond_2) (Brush_1)(Brush_2)	XT30	AI2:4-20mA-	XT40	/

Figure. 31 - Terminal Definition Detail Diagram

Lot Info

This interface displays information related to the 4G gateway and the status of the connection.

The device has been installed with a 4G gateway. *NOTE: If you want to use it, please contact the Pyxis Laboratory for detailed information.*

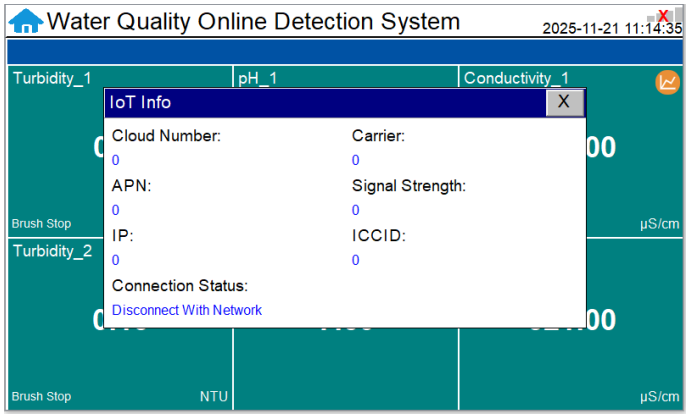


Figure. 32 - Lot Info

3.5.5. Comm Setup

Clicking on **"Comm Setup "** opens a sub-menu for **Modbus RTU** , **Modbus TCP**.

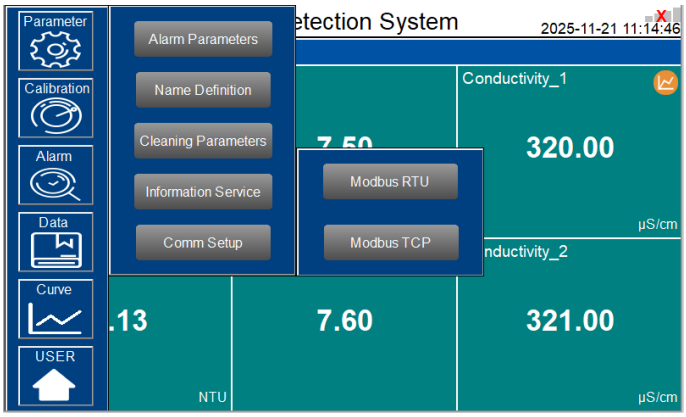


Figure. 33 - Comm Setup

Modbus RTU and Modbus TCP

Communication parameters generally do not need to be changed. If the communication station number and other parameters need to be changed on site, they can be changed on this interface.

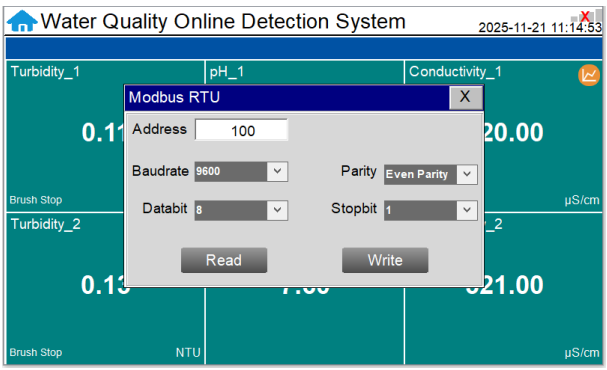


Figure. 34 - Modbus RTU

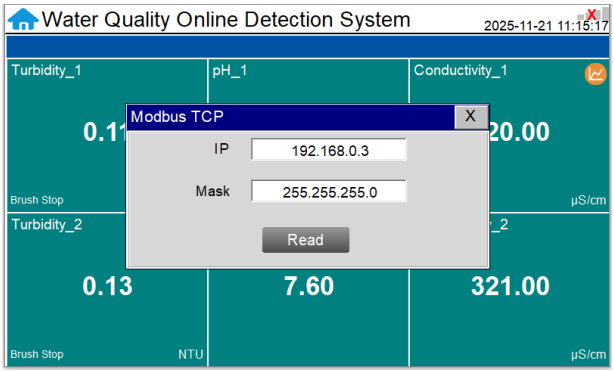


Figure. 35 - Modbus TCP

3.6. Calibration

Click on the "Calibration" button in the menu bar and select the sensor to be calibrated.

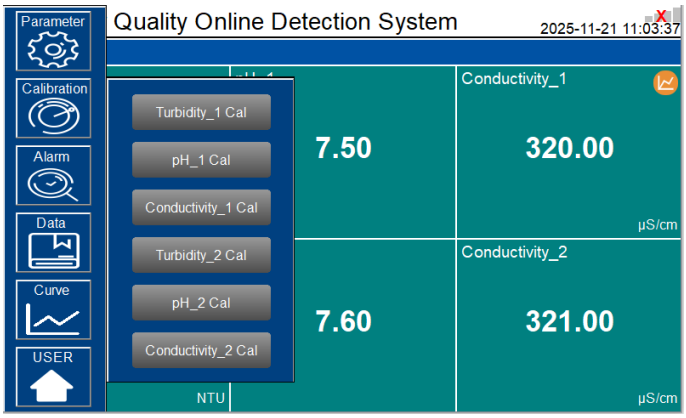


Figure. 36 - Sensor Calibration

3.6.1. Turbidity Calibration

The LT-736 Turbidity Sensor is rigorously calibrated at the Pyxis Lab factory. If the sensor is kept clean, the user will not need to calibrate the sensor for one year of operation. However, the user may calibrate the sensor as desired.

NOTE: Calibration of the LT-730 series sensors can be carried out in a flow cell or mounting piece (FR-100 or FT-100), or using an L-CAL turbidity calibration cell. Using an L-CAL turbidity calibration cell consumes less liquid standard solution than using FR-100 for calibration. An L-CAL requires approximately 500mL of turbidity standard solution.

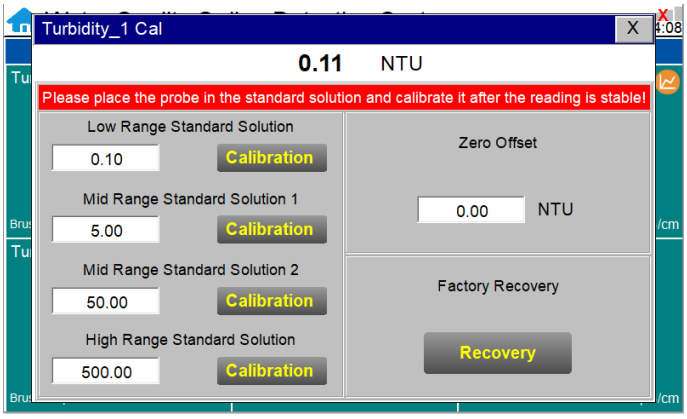


Figure. 37 - Turbidity Calibration

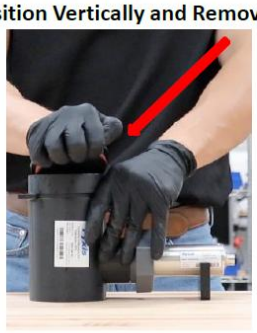
L-CAL Portable Liquid Formazin Calibration Kit Use Method

After removing the LT-73X sensor, gently wipe off the flat distal end with a soft cloth to ensure it is clean. The LT-73X Sensor should then be calibrated using the L-CAL portable liquid calibration kit using the following steps, and wirelessly calibrated via the uPyxis Mobile or Desktop APP. Please refer to LT-73X Series Operation Manual for details.

Insert LT-73X Sensor

Tighten Sensor Nut

Position Vertically and Remove Lid



Preclean by adding DI-Water (200mL)

Insert Lid

Gently Shake Then Empty Contents

Add Calibration Standard (500mL)

Insert Lid and Remove Air Bubble Vent Line Cap

FOLLOW CALIBRATION STEPS

NOTE *Sensor Brace Included with L-CAL Kit for Stability*

WATCH PROCEDURE VIDEO https://www.youtube.com/watch?v=1MuJM5Q5VB4

Low-Range Calibration Procedure DI Water in the Pyxis L-CAL Portable Turbidity Calibration Kit:

Triple rinse the LT-736 sensor surface and the L-CAL Portable Turbidity Calibration Kit (P/N 53247) vessel with Deionized water. Insert the cleaned LT-736 turbidity sensor into the L-CAL calibration vessel and positon the L-CAL vessel vertically. Remove the top cap and fill the L-CAL vessel with 500mL of bubble free deionized water. After the displayed turbidity data is stable, enter "0.05" for the low-range calibration value and click on "Low Range Calibration", a dialog box will pop up to confirm whether to perform this operation. Click "OK", if the calibration is successful, the dialog box will show "Calibration successful". ***NOTE*** Because there is no global standard for zero turbidity in the industry, Pyxis recommends 0.05 NTU as a target for Low-Point Calibration while using Bubble-Free DI Water.

Mid-Range Calibration using the L-CAL Portable Turbidity Calibration Kit:

The mid-range calibration of LT-736 is further divided into mid-low point calibration and mid-high point calibration. The turbidity standard solution concentration for mid-low point calibration is 5-10 NTU, and the range for mid-high point calibration is 10-100 NTU.

Mid-low point calibration

After the low range calibration has been completed, rinse the L-CAL vessel with Deionized water and refill with 500mL of known turbidity standard solution between 5 NTU and 10 NTU for mid-range calibration. After the displayed data is stable, enter the medium turbidity standard solution value and click on "Mid Range Calibration 1", a dialog box will pop up to confirm whether to perform this operation. Click "OK", if the calibration is successful, the dialog box will show "Calibration successful".

Mid-high point calibration

After the Mid-low range calibration has been completed, rinse the L-CAL vessel with Deionized water and refill with 500mL of known turbidity standard solution between 10 NTU and 100 NTU for mid-range calibration. After the displayed data is stable, enter the medium turbidity standard solution value and click on "Mid Range Calibration 2", a dialog box will pop up to confirm whether to perform this operation. Click "OK", if the calibration is successful, the dialog box will show "Calibration successful".

High-Range Calibration using the L-CAL Portable Turbidity Calibration Kit:

If a high-range calibration is not required, the user does not need to perform a high-range calibration of the LT-736 sensor. If a high calibration is required, proceed by rinsing the L-CAL vessel with deionized water and refill with known turbidity standard solution between 100 NTU and 1000 NTU for high-range calibration. After the displayed data is stable, enter the high turbidity standard solution value and click on "High Range Calibration", a

dialog box will pop up to confirm whether to perform this operation. Click "OK", if the calibration is successful, the dialog box will show "Calibration successful".

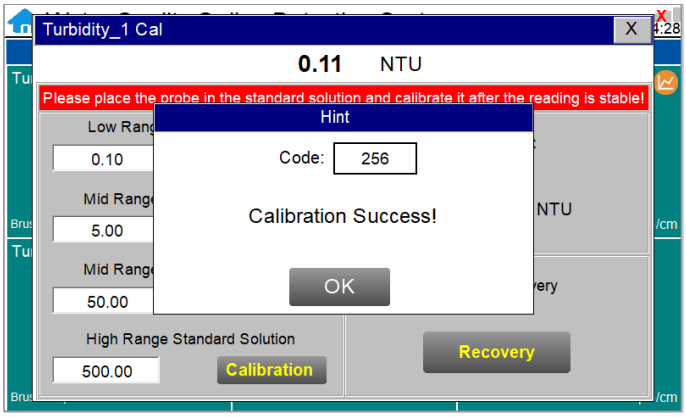


Figure. 38 - Turbidity Calibration Success Prompt

3.6.2. pH Calibration

The pH function is thoroughly calibrated at the Pyxis Lab factory. After checking with a pH standard buffer solution, if the sensor value has shifted, then the user may choose from single-point, two-point or three-point calibration to re-calibrate the pH portion of the ST-710SS sensor as desired.

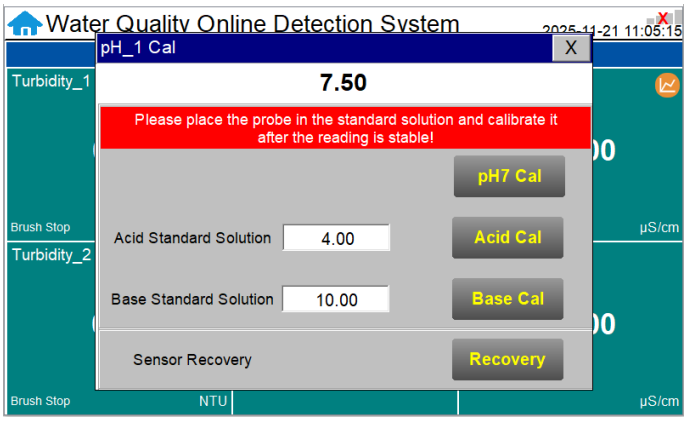


Figure. 39 - pH Calibration

Single Point pH Calibration

Remove the ST-710SS sensor and rinse 3x with DI water. Submerge the sensor into a beaker with pH=7 buffer solution. Click "pH7 calibration". A dialog box will pop up to confirm whether to perform this operation, click "OK" if the calibration operation is confirmed, if the calibration is successful the dialog box will show "calibration success".

Two Point pH Calibration

Remove the ST-710SS sensor and rinse 3x with DI water. Submerge the sensor into a beaker with pH=7 buffer solution. Click "pH7 calibration". A dialog box will pop up to confirm whether to perform this operation, click "OK" if thecalibration operation is confirmed, if the calibration is successful the dialog box will show "calibration success".

After pH7 is successfully calibrated, you can choose acid calibration or alkali calibration for the second calibration point. If you choose acid calibration, clean beaker 3x with deionized water. Fill the beaker with pH=4 buffer solution. Enter the value 4 in the calibration value dialog box, and click "Acid Calibration", then a dialog box will pop up to confirm whether to perform this operation. Click "OK" if the calibration operation is confirmed and the dialog box will show "Calibration Successful" if the calibration is successful. Similarly a pH=10 buffer solution can be selected for the second point calibration if desired.

Three Point pH Calibration

Remove the ST-710SS sensor and rinse 3x with DI water. Submerge the sensor into a beaker with pH=7 buffer solution. Click "pH7 calibration". A dialog box will pop up to confirm whether to perform this operation, click "OK" if the calibration operation is confirmed, if the calibration is successful the dialog box will show "calibration success".

After pH7 is successfully calibrated, you can choose acid calibration or alkali calibration for the second calibration point. If you choose acid calibration, clean the beaker 3x with deionized water. Fill the beaker with pH=4 buffer solution. Enter the value 4 in the calibration value dialog box, and click "Acid Calibration", then a dialog box will pop up to confirm whether to perform this operation. Click "OK" if the calibration operation is confirmed and the dialog box will show "Calibration Successful" if the calibration is successful.

After successful acid calibration, select pH=10 for alkali calibration. Clean the beaker 3x with deionized water. Fill the beaker with pH=10 buffer solution. Enter the value 10 in the calibration value dialog box, and click "Alkali Calibration", then a dialog box will pop up to confirm whether to perform this operation. Click "OK" if the calibration operation is confirmed and the dialog box will show "Calibration Successful" if the calibration is successful. The three-point calibration is completed.

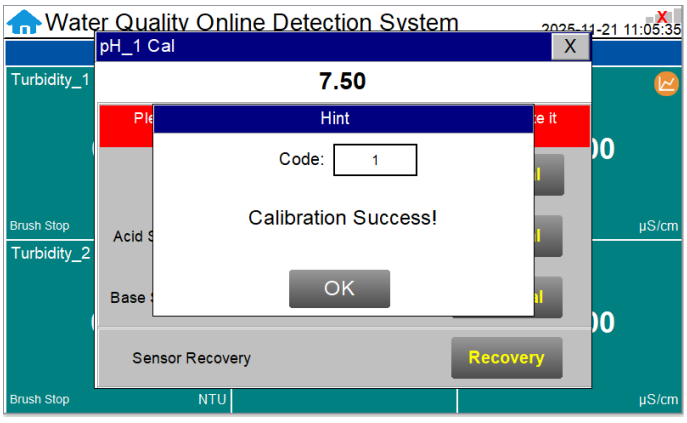


Figure. 40 - pH Calibration Success Prompt

3.6.3. Conductivity Calibration

The conductivity sensor only needs to be calibrated once, put the sensor into the standard solution with known standard solution value, enter the standard solution value in the interface, then click **“Calibration”**, wait for the calibration completion prompt to pop up, which means the calibration is successful.

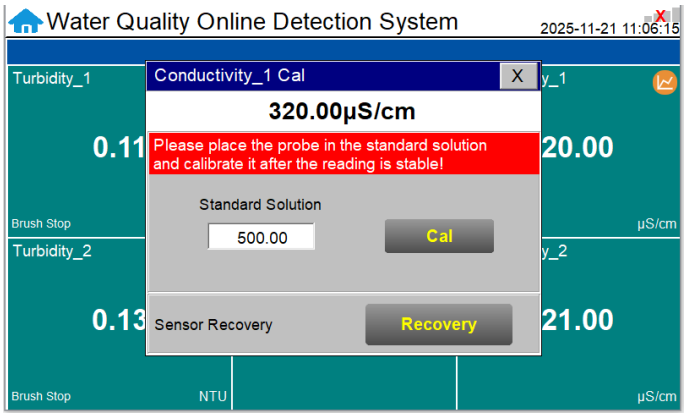


Figure. 41 Conductivity Calibration

3.6.4. Recovering Data

Click the recovery button in the calibration interface of each sensor to restore the data of sensors. If a user error is made during calibration and other operations, you may restore the factory settings of the sensor through the restore function.

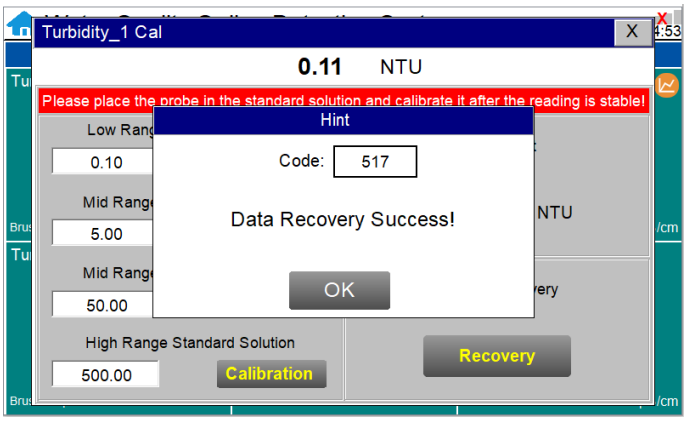


Figure. 42 – Recovering

3.7. Alarm

Click the "Alarm" button on the main screen to enter the alarm view screen.

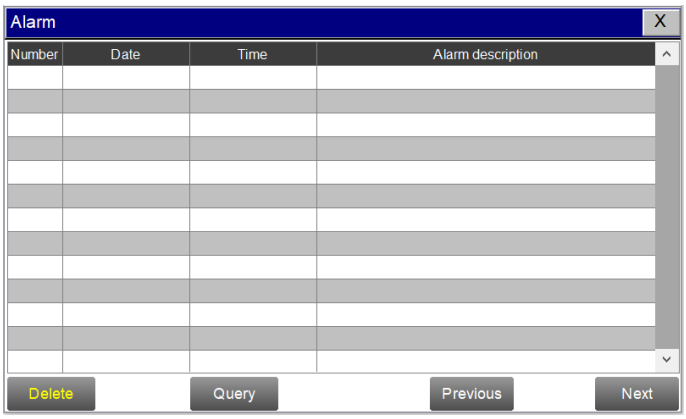


Figure. 43 - Alarm View

In this screen users can browse all logged alarms. Drag the right scroll bar up and down to view the history of alarms. Click "Previous" and "Next" to advance to the next page. Click “Query” then enter the alarm number in the pop-up box to query that alarm.

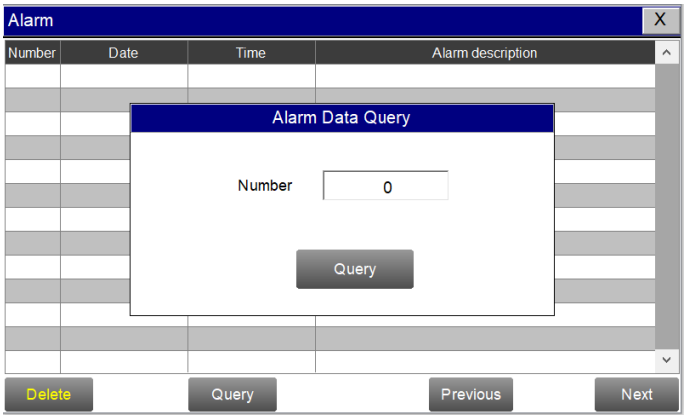


Figure. 44 - Alarm Data Query Screen

The Delete button in the lower left corner will delete all alarm records. After clicking delete, you must exit the screen and reenter before the historical data within the data report will be cleared.

3.8. Data

Click on **"Data"** to view historical data and calibration logs.

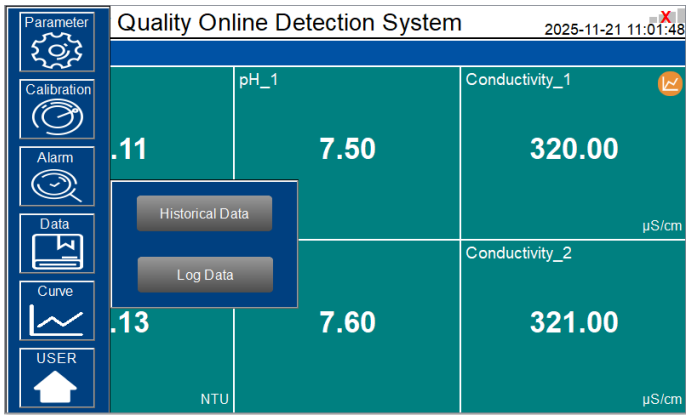


Figure. 45 - Data

3.8.1. Historical data

Click the "Data" button in the menu bar to enter the data report interface.

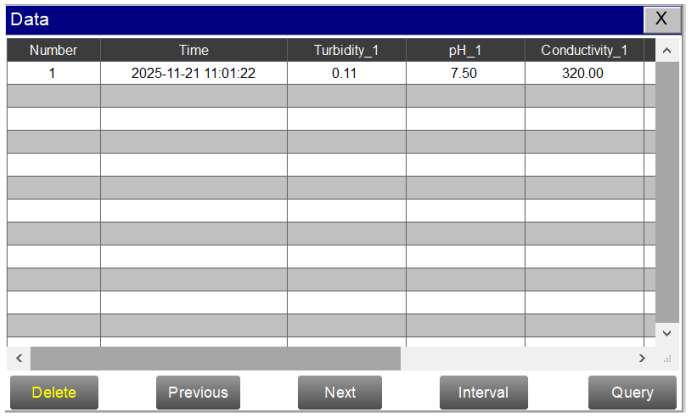


Figure. 46 - Historical Data Screen

In the data report, the user can view the stored data of all parameters. The system records sensor readings every 4 seconds by default but this can be edited by the user if desired. Drag the scroll bar on the right to slide up or down or click "Previous" and "Next" to view historical data records. The data record can save up to 100,000 data entries. New

data will overwrite the previously saved data after recording 100,000 data entries. The user can click the “Periodicity” button to change the data recording time interval.

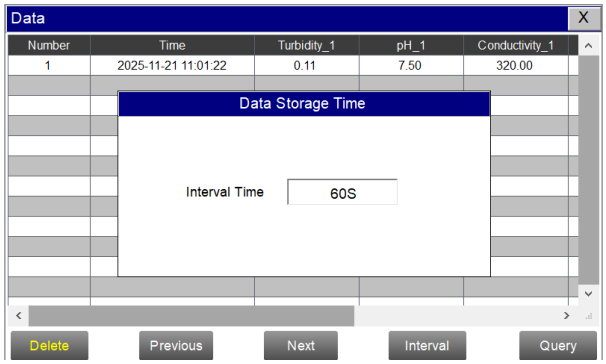


Figure. 47 - Data Storage Cycle Time Setting

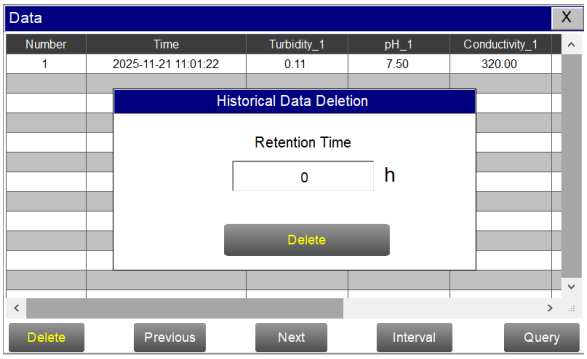


Figure. 48 - History Data Deletion Screen

Click “Delete” in the lower left corner. After entering the retention time, click the “Delete” button to clear all historical data within the retention time range.

Click the “Query”button in the lower right corner, enter the start time and end time and then click the “Query” button. Note that the start time and end time must be filled in exactly and completely according to the system time format.

Insert a USB disk behind the display screen and enter the time range of the data to be exported in the query area. Click on the “Data Export” to download the data to the USB disk. The data quantity will be shown as a positive number if data export is successful. If the data export was not successful, please check whether the time format is correct.

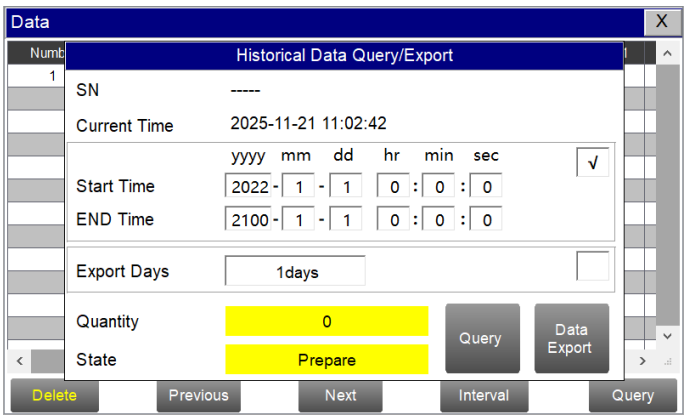


Figure. 49 - Historical Data Query and Export Screen

3.8.2. Calibration Log

The calibration log can be viewed in the calibration log interface, and when the export operation is performed, the diagnostic parameters, historical data, and calibration log will be exported simultaneously.

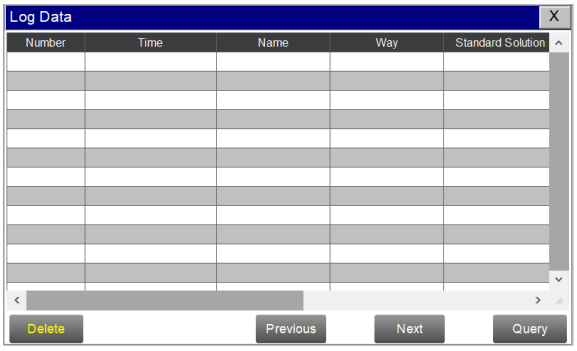


Figure. 50 - Calibration Log

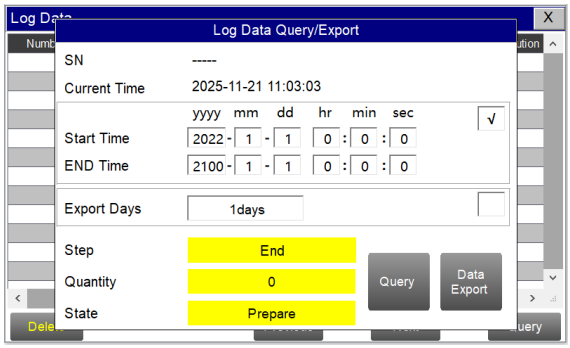


Figure. 51 - Calibration Log Query/Export

3.9. Curve

Click the "Curve" button in the menu bar to enter the trend curve interface. You can click the buttons below the X-axis to browse and view the values in a different time range. Click on Y-axis Range to change the minimum and maximum Y-axis values for a proper range.

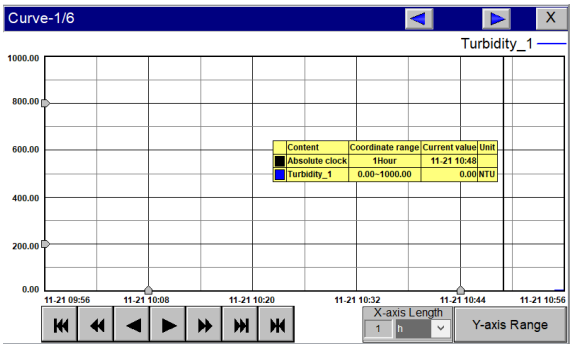


Figure. 52 - History Curve Screen

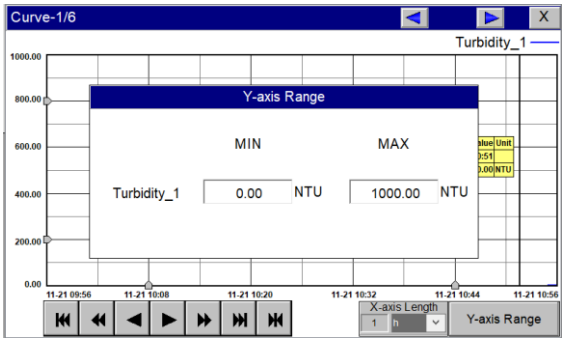


Figure. 53 - Y-axis Range Setting

The curve will scroll back (to the left of the X-axis) one page

The curve will scroll back (to the left of the X-axis) half the page of the curve

The curve will scroll backward (to the left of the X-axis) to a position where the main line is drawn

The curve will scroll forward (to the right of the X-axis) to a position where the main line is drawn

The curve will scroll forward (to the right of the X-axis) half the page of the curve

The curve will scroll forward (to the right of the X-axis) one page

A dialog box will pop up to reset the starting time of the curve

Figure. 54 - Button Function Review

3.10. User

Click the "User " button on the menu bar and then you can select "Login", "Logout" and "Manage" operations.

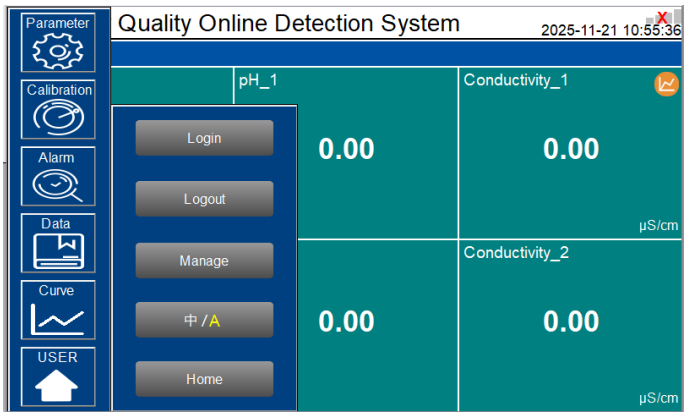


Figure. 55 - User Management

Logout enables the user to log out of the logged-in state and only view the real-time readings, but cannot perform operations such as parameter settings. Click “Manage” to enter the user management interface, where you can add users, change passwords and other operations. Users can set their own user name and password and select the user group they belong to. Only users in the administrator group can set parameters such as calibration.

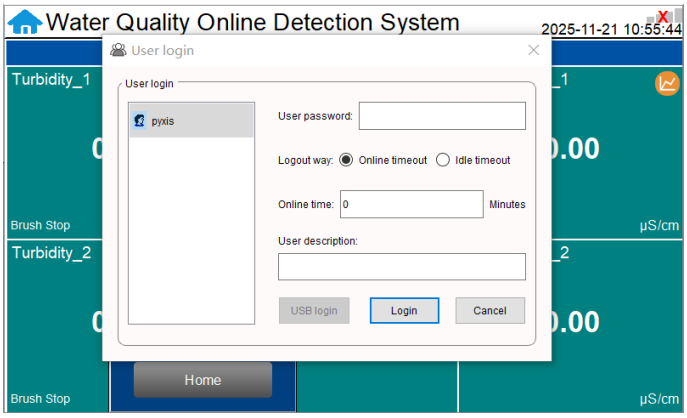


Figure. 56 - User Management Screen

ModifyPassword: Select the user you want to change, then click Modify User button, enter the user's own password in the User Password column and Confirm Password column, and click Confirm to modify successfully. ***NOTE*** *If you do not want to set the password, you can delete the password and save it.*

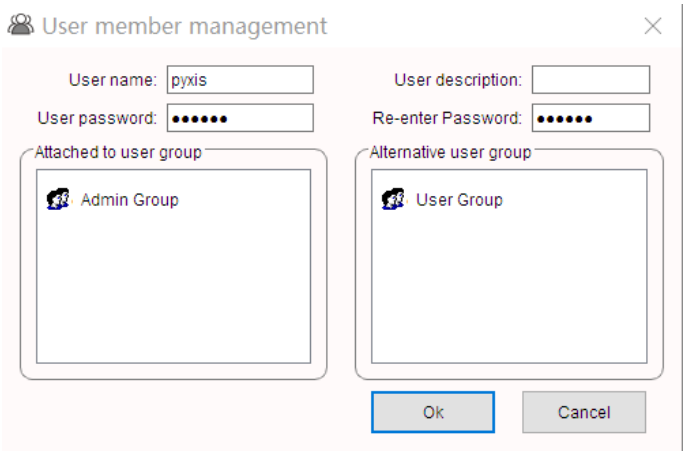


Figure. 57 - Modifying the User Screen

4. Modbus Register Table

Number	Definition	Address	Format	Mode	Unit	Note
1	Turbidity	1	float	read only	NTU	Data format ABCD
2	pH	3	float	read only		
3	Conductivity	5	float	read only	μS/cm	
4	Turbidity_2	7	float	read only	NTU	
5	pH_2	9	float	read only		
6	Conductivity_2	11	float	read only	μS/cm	
7	Turbidity up limit alarm	13	uint	read only		0: normal 1: Alarm
8	Turbidity lower limit alarm	14	uint	read only		
9	The communication of the Turbidity sensor is abnormal	15	uint	read only		
10	pH up limit alarm	16	uint	read only		
11	pH lower limit alarm	17	uint	read only		
12	The communication of the pH sensor is abnormal	18	uint	read only		
13	Conductivity up limit alarm	19	uint	read only		
14	Conductivity lower limit alarm	20	uint	read only		
15	The communication of the Conductivity sensor is abnormal	21	uint	read only		
16	Turbidity_2 up limit alarm	22	uint	read only		
17	Turbidity_2 lower limit alarm	23	uint	read only		
18	The communication of the Turbidity_2 sensor is abnormal	24	uint	read only		
19	pH_2 up limit alarm	25	uint	read only		
20	pH_2 lower limit alarm	26	uint	read only		
21	The communication of the pH_2 sensor is abnormal	27	uint	read only		
22	Conductivity_2 up limit alarm	28	uint	read only		
23	Conductivity_2 lower limit alarm	29	uint	read only		
24	The communication of the Conductivity_2 sensor is abnormal	30	uint	read only		
25	The communication of the analog module is abnormal	31	uint	read only		
26	The communication of the relay module is abnormal	32	uint	read only		
27	The communication of the cleaning module is abnormal	33	uint	read only		
28	Abnormal brush	34	uint	read only		
29	The communication of the cleaning module_2 is abnormal	35	uint	read only		
30	Abnormal brush_2	36	uint	read only		
Communication protocol: standard Modbus-RTU						
Communication parameters: baud rate -9600, data bit -8, stop bit -1, parity bit - even						

Station number: 100
Communication protocol: standard Modbus-TCP
Communication parameters: IP: 192.168.0.3 (can be set); port: 502
Station number: 1

Table 1 - Correspondence Address

5. Replacing the pH Electrode Head of ST-710SS

The electrode heads of the ST-765 Series and ST-71X Series sensors can be replaced when the original electrode heads have reached the end of their working life. The typical working life of the electrode can be as long as 2-years under normal operating conditions. Please refer to the following steps to replace the electrode head of your sensor.

1. Turn off the sensor if it is powered off and make sure there is no water on the sensor.
2. Hold the sensor main body with one hand and use the other hand to twist the locking ring counterclockwise until the front end of the black electrode is completely unscrewed, *as shown in Figure2.*
   NOTE* The sensor electrode head is oriented towards the ground to avoid residual water flowing into the sensor.
3. Pull out the electrode head *as shown in Figure 3.* Wipe the electrode head with a dust-free cloth or paper-towel.
4. Loosen the electrode plug connector and remove the electrode head, *as show in Figure 4.*
5. To assemble the new electrode head, please use the mounting hook to unplug the wiring plug, *as shown in Figure 5.*
   ***NOTE* Before connecting the electrode head, please make sure that the new electrode head gasket is properly installed at the bottom of the electrode head thread to ensure a watertight seal, as shown in Figure 5.**
6. Then reconnect, insert the new electrode head into the main sensor housing and ensure that the two alignment protrusions on the electrode head are aligned with the notches in the sensor main housing, *as shown in Figure 6.* Then twist the lock ring of sensor in a clockwise direction until the threads of the electrode head completely enter the sensor housing *as shown in Figure 1.*

6. Sensor Cleaning Pyxis Probe Cleaning Kit

In the event of heavy inorganic deposition on any of the Pyxis sensors, users may conduct an off line chemical cleaning using the Pyxis Probe Cleaning Kit (P/N: SER-01). Remove the sensor from the tee assembly and inspect the electrode head or optical channel. Soak the lower half of the sensor in 100 mL Pyxis Probe Cleaning Solution for 10-15 minutes. Gently wipe the sensor electrode head or the optical channel with the provided Q-tips and Pipe Cleaner provided. If the surface is not entirely clean, continue to soak the sensor for an additional time until clean. Rinse the sensor with distilled water. Pyxis Lab Probe Cleaning Kit can be purchased at our online Estore/Catalog at https://www.pyxis-lab.com/product/inline-sensor-cleaning-kit/

7. Contact Pyxis Lab

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service@pyxis-lab.com for technical service and support

order@pyxis-lab.com for order and pricing inquires

1-866-203-8397 Phone USA for all needs

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