Pyxis®

UC-100A Display & Data Logging Terminal

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CUSTOM MANUAL

Pyxis

General Information

In no event will the manufacturer be liable for direct, indirect, special, incidental or consequential damages resulting from any defect or omission in this manual. The manufacturer reserves the right to make changes in this manual and the products it describes at any time, without notice or obligation. Revised editions are found on the manufacturer's website.

Safety Information

Please read this entire manual before unpacking, setting up or operating this equipment. Pay attention to all danger, warning and caution statements. Failure to do so could result in serious injury to the operator or damage to the equipment.

To make sure that the protection provided by this equipment is not impaired, do not use or install this equipment in any manner other than that specified in this manual.

Use of Hazard Information

 **DANGER**
Indicates a potentially or imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING**
Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION**
Indicates a potentially hazardous situation that may result in minor or moderate injury.

NOTICE
Indicates a situation which, if not avoided, may cause damage to the instrument. Information that requires special emphasis.

	This symbol, if noted on the instrument, refers to the instruction manual for operation and/or safety information.
	This symbol, when noted on a product enclosure or barrier, indicates that a risk of electrical shock and/or electrocution exists.
	Delicate internal electronic components can be damaged by static electricity, resulting in degraded performance or eventual failure.
	Electrical equipment marked with this symbol may not be disposed of in European public disposal systems after 12 August of 2005. In conformity with European local and national regulations (EU Directive 2002/98/EC), European electrical equipment users must now return old or end-of-life equipment to the Producer for disposal at no charge to the user.

Pyxis

Catalog

Pyxis

1. Specifications

Items	HM-510SS-T
Part Number	53560
Oil-in-Water Range	0.5–1000 ppm
Oil-in-Water Accura	0.1 ppm or ≤3% of reading
Turbidity Range	0-100NTU
Turbidity Accura	±0.5 NTU or ±2%
Method	UV-Fluorescence
Emission Wavelength	365 nm
Excitation Wavelengths	410 nm/470 nm
Outputs	4–20mA Analog Output, RS-485 Digital Output with Modbus protocol
Installation	3/4” FNPT threaded ports
Cable Length	5 ft with IP67 connectors
Power Supply	22–26 VDC, 65 mA
Weight	2.5 lbs (1130 g)
Material	304 Stainless Steel
Operational Temperature	40–104 °F (4–40 °C)
Storage Temperature	20–140 °F (-7–60 °C)
Pressure	Up to 290 lbs (2.0 MPa)
Enclosure Rating	IP67
Regulation	CE

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; 10A Fuse; 200 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

***** With Pyxis’s continuous improvement policy, these specifications are subject to change without notice.

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.

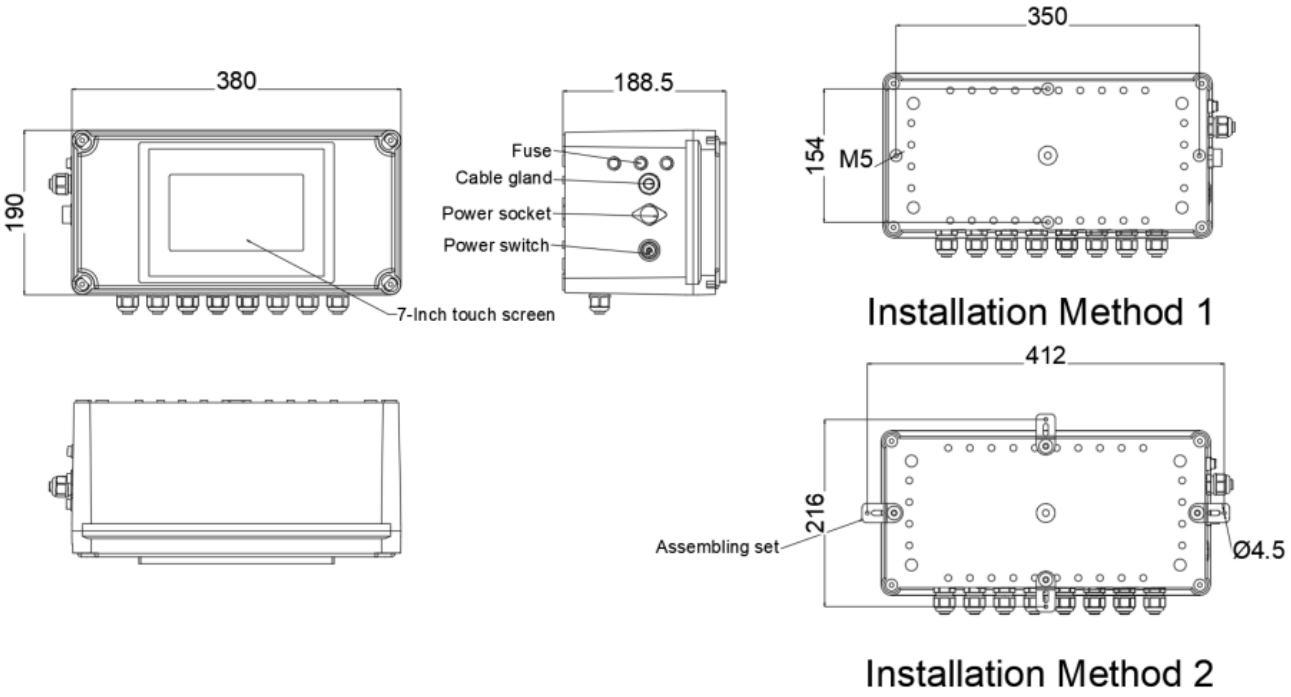


Figure. 1 UC-100A Installation Dimensions

2.3. UC-100A Electrical Connection

Users of online detection analyzer equipment only need to plug the power plug into a power socket of 100~240V AC 50/60Hz, and they can operate normally. The enlarged drawing can be seen in the attachment.

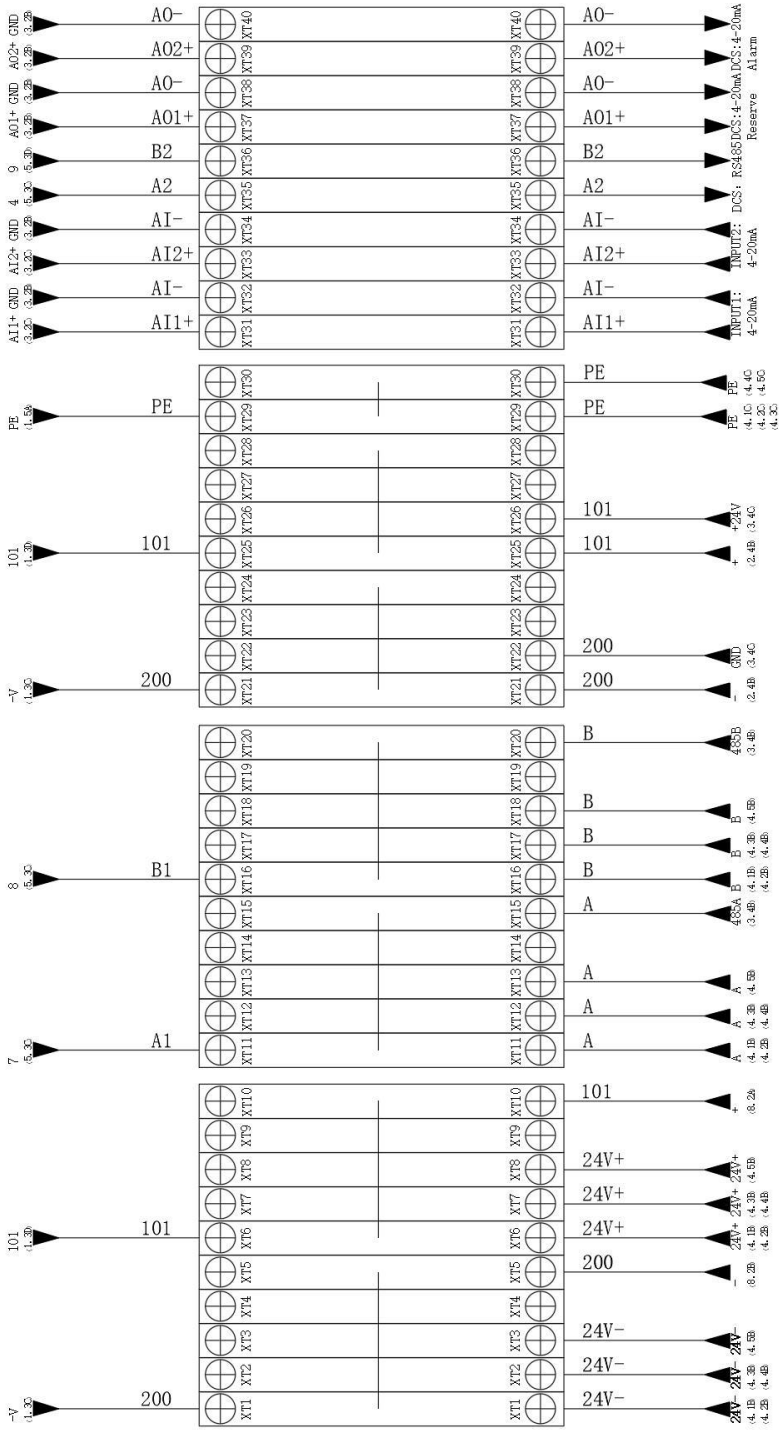


Figure. 2 UC-100A Terminal Board

3. UC-100A Touch Screen operation

3.1. Initial screen

After the system is powered on, the screen will open the initial screen, where the user can select the user to log in or enter the system.

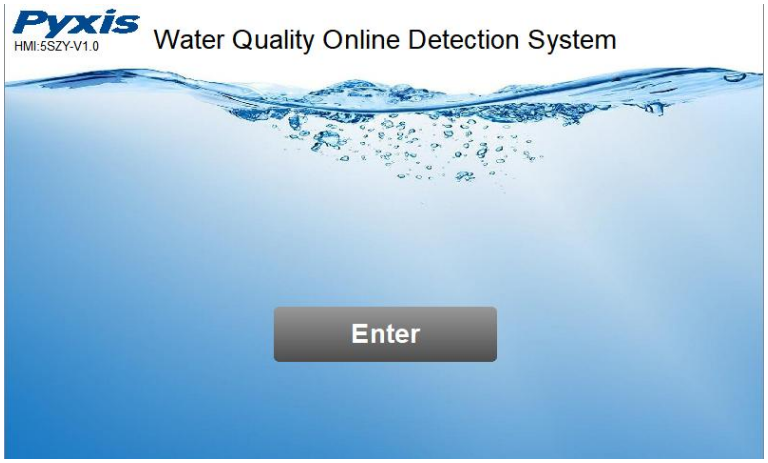


Figure. 3 Main Interface

3.2. User Login

After booting, the user needs to log in with the user name and password, otherwise they can only view the reading on the main interface, and cannot perform instrument parameter setting and calibration. Click the "User Login" button, a prompt box pops up: select the user **"pyxis"**, enter the password: **"888888"** in the user password field.

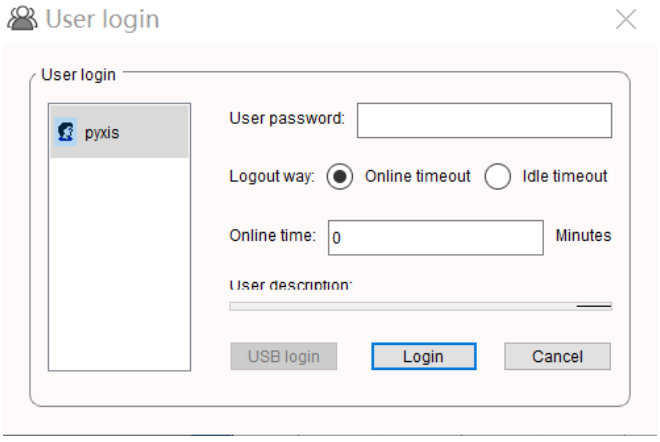


Figure. 4 User Login Interface

If you don't need a password or want to change the user, you can enter the system and perform **"Management"** in the **"User Management"** interface 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, where the data detected by the sensor will be displayed in real time.

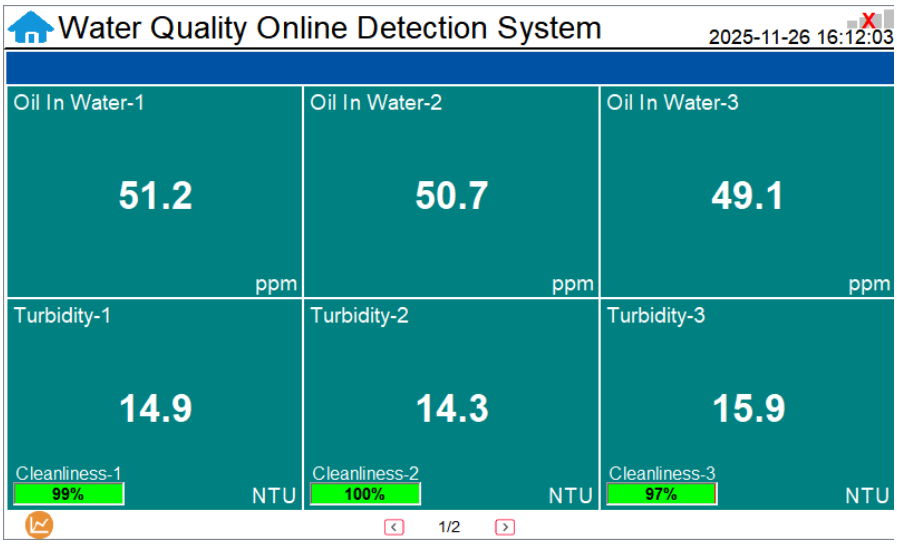


Figure. 5 Real-time Monitoring Screen

3.4. Connecting Duplicate Sensors For Modbus Matching

When the 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.*

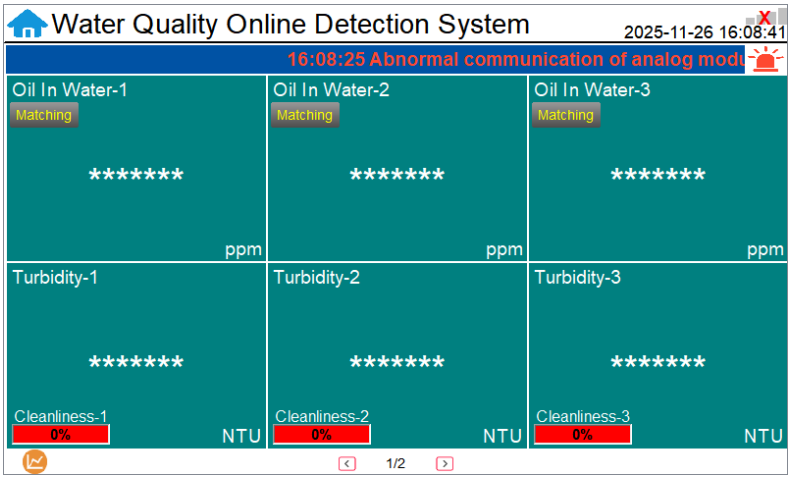


Figure. 6 Loss of Sensor Signal

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.

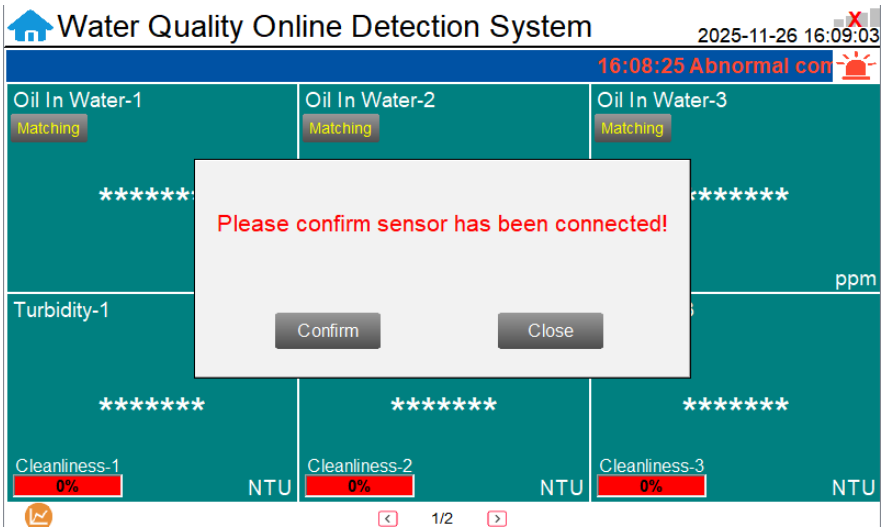


Figure. 7 Confirm Sensor Replacement

After clicking **"Confirm"**, the system will start to match the sensors and wait for the matching to complete.

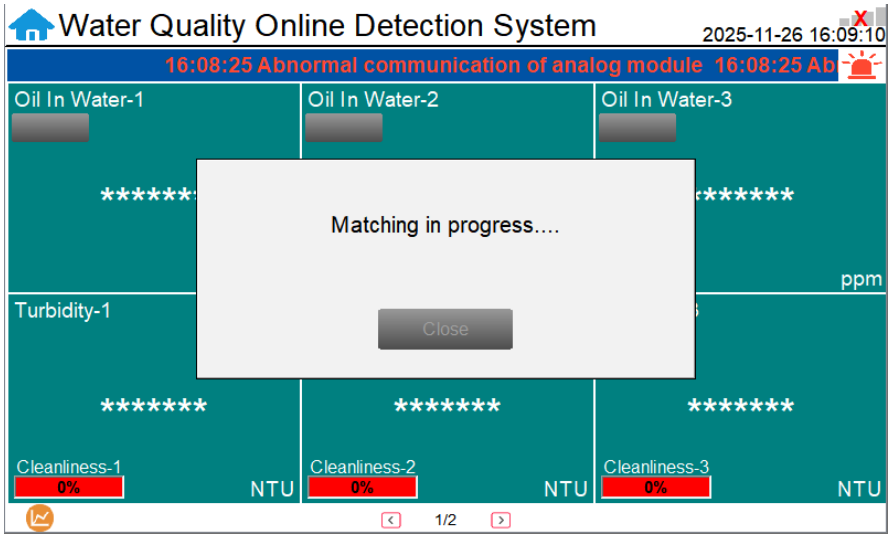


Figure. 8 Matching in Progress

When the prompt **"Please power cycle the sensor! "** indicates that the sensor is successfully matched, close the prompt box and then restart controller.

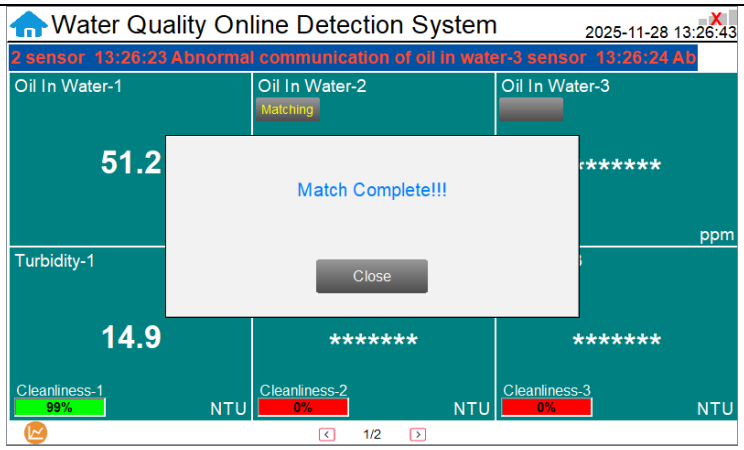


Figure. 9 Match Complete

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.

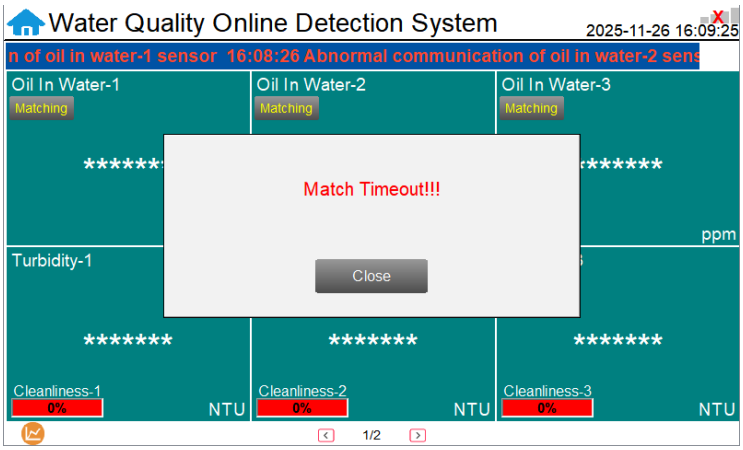


Figure. 10 - Match Timeout

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

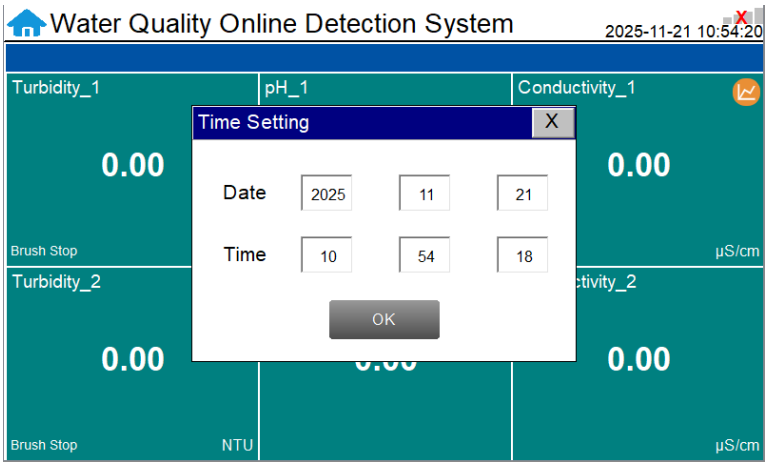


Figure. 11 - Time Setting

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

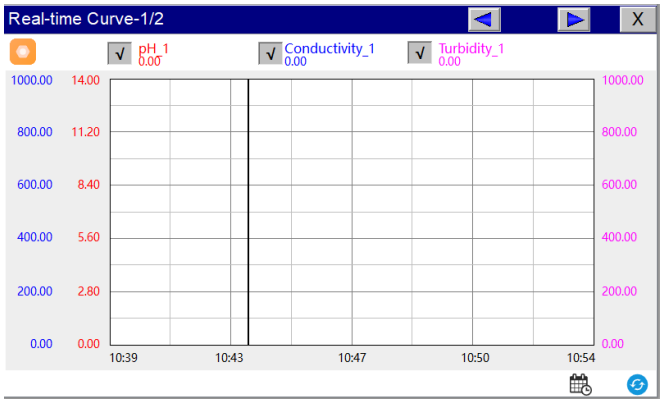


Figure. 12 - Real-time Curve

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.

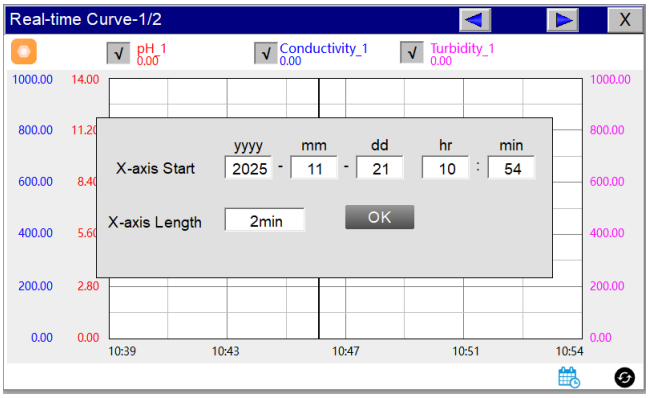


Figure. 13 - X-axis Range

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

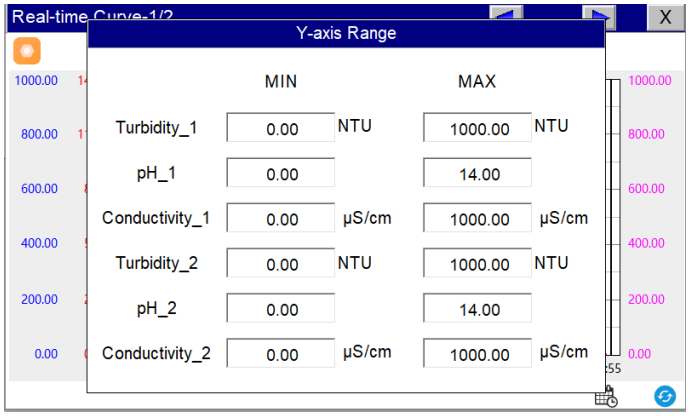


Figure. 14 - Y-axis Range

3.5. Menu Bar

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

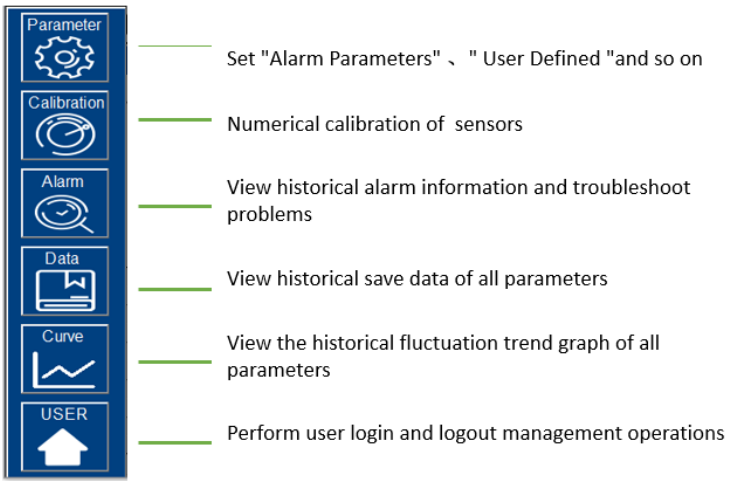


Figure. 15 Menu Bar

3.6. Parameter Setting

Click the **"Parameter"** button in the menu bar, you can choose to enter the **"Alarm Parameters"** and **"User Defined"** setting interface:

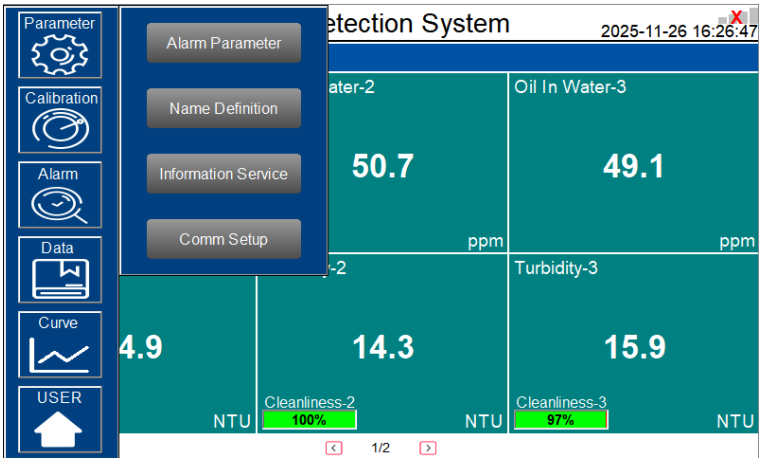


Figure. 16 Parameter Settings

3.6.1. Alarm Parameters

When the online user has the right to operate the instrument, the upper and lower limits of alarm can be set. Click **"Alarm Parameters"** to enter the interface of setting alarm parameters. When the measured value is lower than the set lower limit, the "**** lower limit alarm" of the corresponding sensor will be displayed in the real-time monitoring screen; when the measured value is higher than the set upper limit, the "**** upper limit alarm" of the corresponding sensor will be displayed in the real-time monitoring screen. Users can also choose to turn on or off the alarm display function at the top of the corresponding parameter

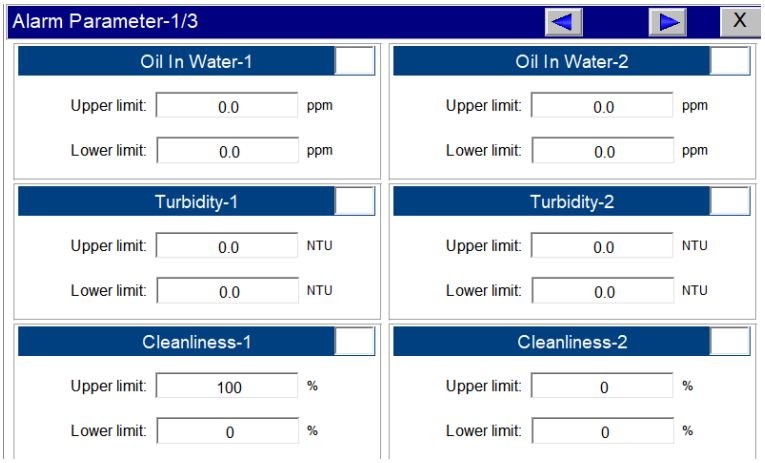


Figure. 17 Alarm Parameter Settings

3.6.2. Name Definition

Click the orange dialog box to customize the sensor name.

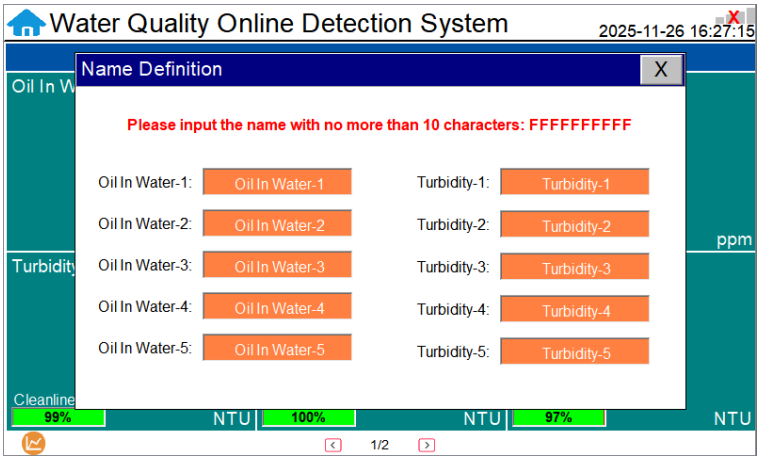


Figure. 18 - Name Definition

3.6.3. Information Service

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

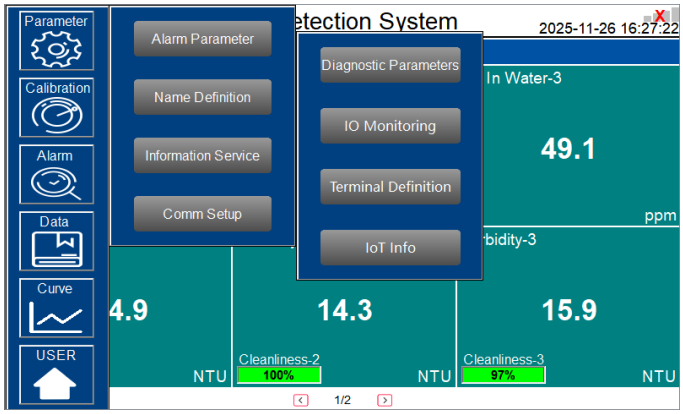


Figure. 19 - Information Service

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.

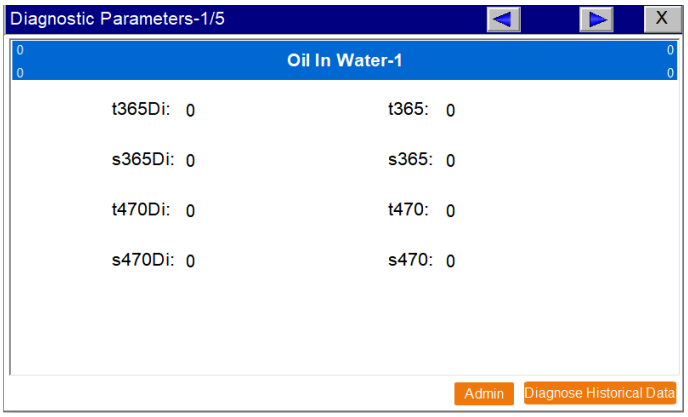


Figure. 20 - Diagnostic Parameters

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.

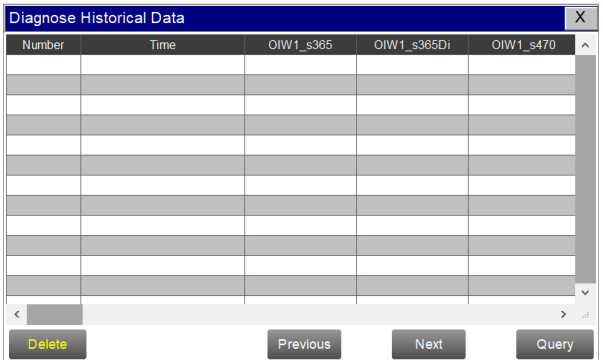


Figure. 21 - Diagnostic History Data

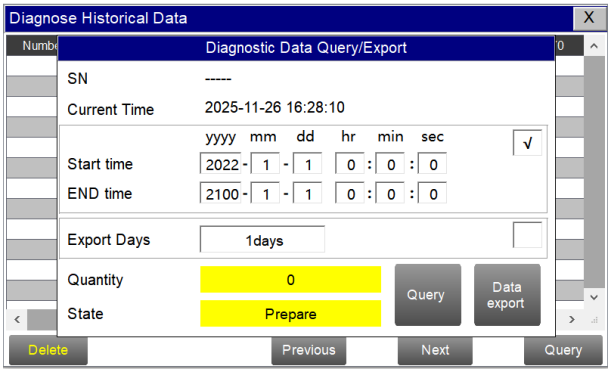


Figure. 22 - Diagnostic History Data Query

IO Monitoring

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

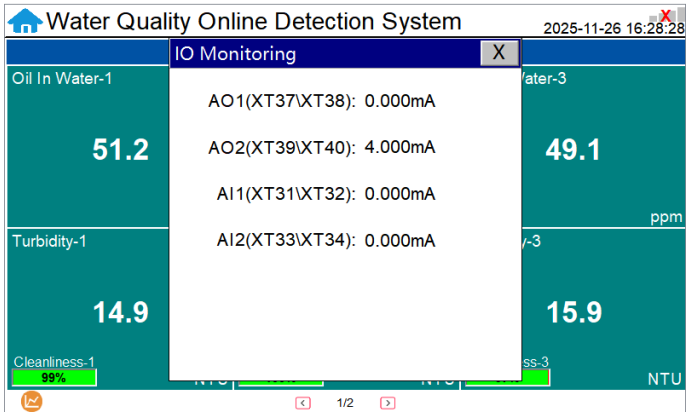


Figure. 23 - IO Monitoring

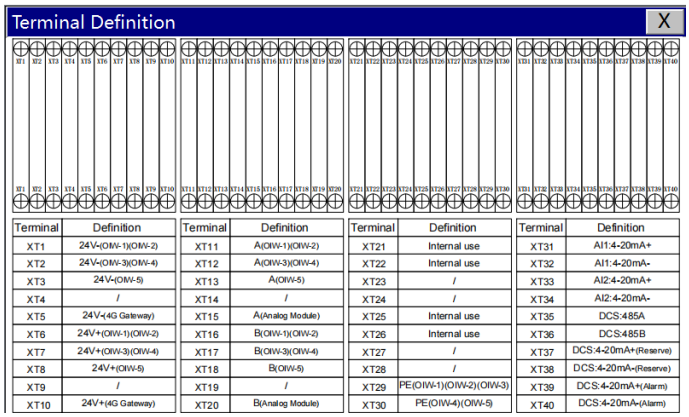
The corresponding table of names and parameters is presented below.

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	24V-(OIW-1)(OIW-2)	XT11	A(OIW-1)(OIW-2)	XT21	Internal use	XT31	AI1:4-20mA+
XT2	24V-(OIW-3)(OIW-4)	XT12	A(OIW-3)(OIW-4)	XT22	Internal use	XT32	AI1:4-20mA-
XT3	24V-(OIW-5)	XT13	A(OIW-5)	XT23	/	XT33	AI2:4-20mA+
XT4	/	XT14	/	XT24	/	XT34	AI2:4-20mA-
XT5	24V-(4G Gateway)	XT15	A(Analog Module)	XT25	Internal use	XT35	DCS:485A
XT6	24V+(OIW-1)(OIW-2)	XT16	B(OIW-1)(OIW-2)	XT26	Internal use	XT36	DCS:485B
XT7	24V+(OIW-3)(OIW-4)	XT17	B(OIW-3)(OIW-4)	XT27	/	XT37	DCS:4-20mA+(Reserve)
XT8	24V+(OIW-5)	XT18	B(OIW-5)	XT28	/	XT38	DCS:4-20mA-(Reserve)
XT9	/	XT19	/	XT29	PE(OIW-1)(OIW-2)(OIW-3)	XT39	DCS:4-20mA+(Alarm)
XT10	24V+(4G Gateway)	XT20	B(Analog Module)	XT30	PE(OIW-4)(OIW-5)	XT40	DCS:4-20mA-(Alarm)

Figure. 24 - 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.

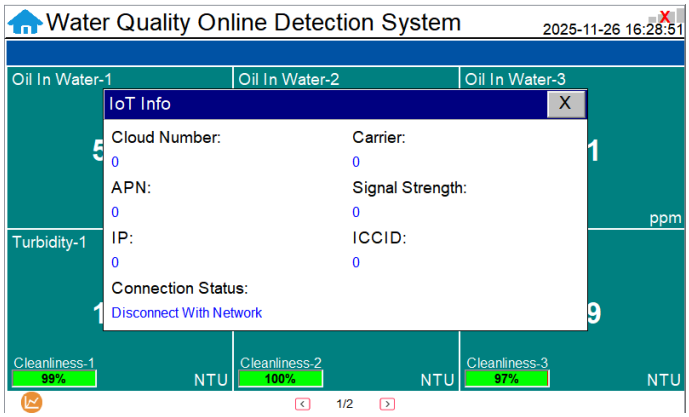


Figure. 25 - Lot Info

3.6.4. Communication (Modbus) Setup

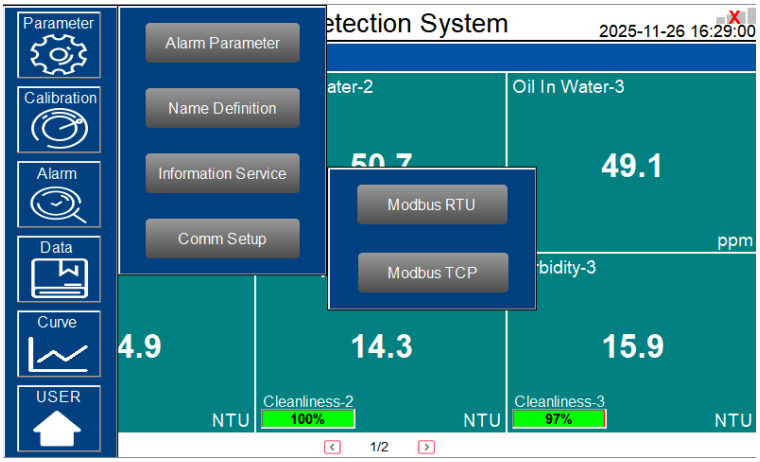


Figure. 26 Communication Setup for Modbus

The Modbus 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.

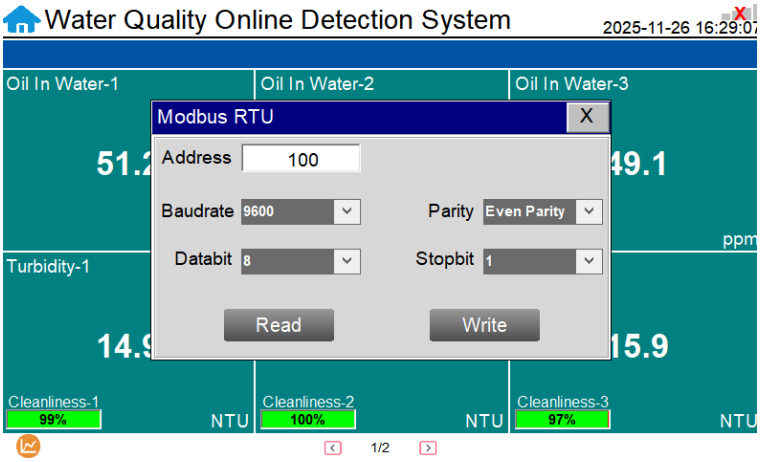


Figure. 27 Modbus RTU

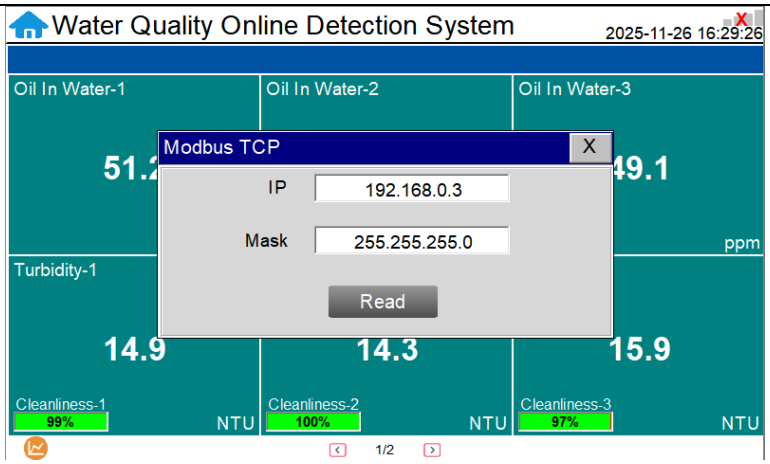


Figure. 28 Modbus TCP

3.7. Calibration

3.7.1. Oil in Water Calibration

The Oil in water sensor has been strictly calibrated before leaving the factory. Therefore, if the sensor is kept clean, the user does not need to calibrate the sensor for one year. However, the user can calibrate the sensor according to their own needs.

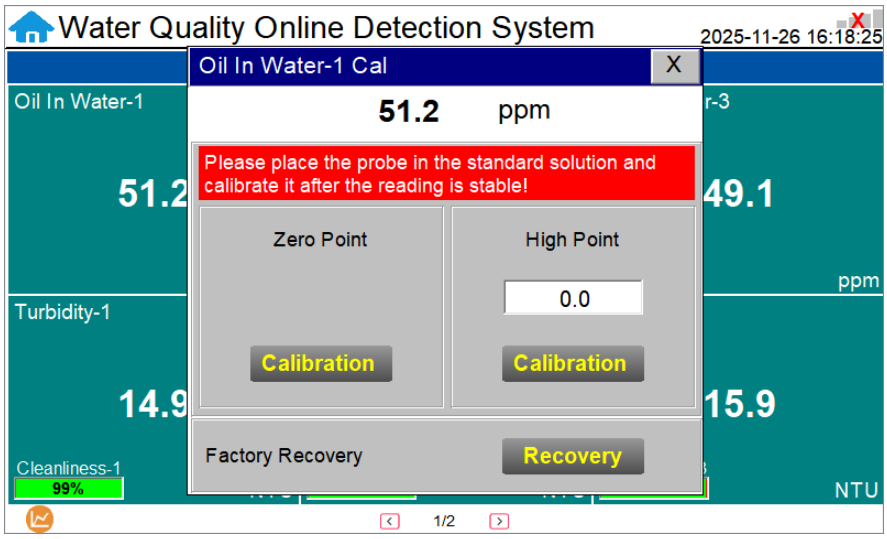


Figure. 29 OIW Calibration

One Point Calibration

Close the water inlet valve, drain all the water in the pipeline, remove the sensor and rinse it with deionized water or tap water 3 times. Place the sensor into a beaker filled with a known Oil in Water standard solution, or with Pyxis OIW-500 (P/N 21038) synthetic oil-in-water calibration standard and cover with a towel to shield the sensor from ambient light. Once stabilized, enter the oil concentration value of the standard solution and click the " High Calibration" to start the High Calibration. After the calibration success box pops up, the calibration is successful.

IMPORTAN NOTE *If deposits are present on the inside of the optical channel of the HM-500 series sensor you may consider soaking the sensor in Pyxis Probe Cleaning Solution Kit (P/N SER-01) for 30 minutes, then brushing with the provided pipe cleaner brush of the kit.*

Two Point Calibration

Close the water inlet valve, drain all the water in the pipeline, remove the sensor and rinse it with deionized water or tap water 3 times. Then insert the sensor into a beaker filled with deionized water and cover with a towel to shield the sensor from ambient light. Click " Zero Calibration" to start the zero calibration.

Then, repeat the above steps and flush the sensor 2-3 times with deionized water or tap water. Place the sensor into a beaker filled with a known Oil in Water standard solution, or with Pyxis OIW-500 (P/N 21038) synthetic oil-in-water calibration standard and cover with a towel to shield the sensor from ambient light. Once stabilized, enter the oil concentration value of the standard solution and click the " High Calibration" to start the High Calibration. After the calibration success box pops up, the calibration is successful.

IMPORTAN NOTE *If deposits are present on the inside of the optical channel of the HM-500 series sensor you may consider soaking the sensor in Pyxis Probe Cleaning Solution Kit (P/N SER-01) for 30 minutes, then brushing with the provided pipe cleaner brush of the kit.*

3.7.1. Turbidity Calibration

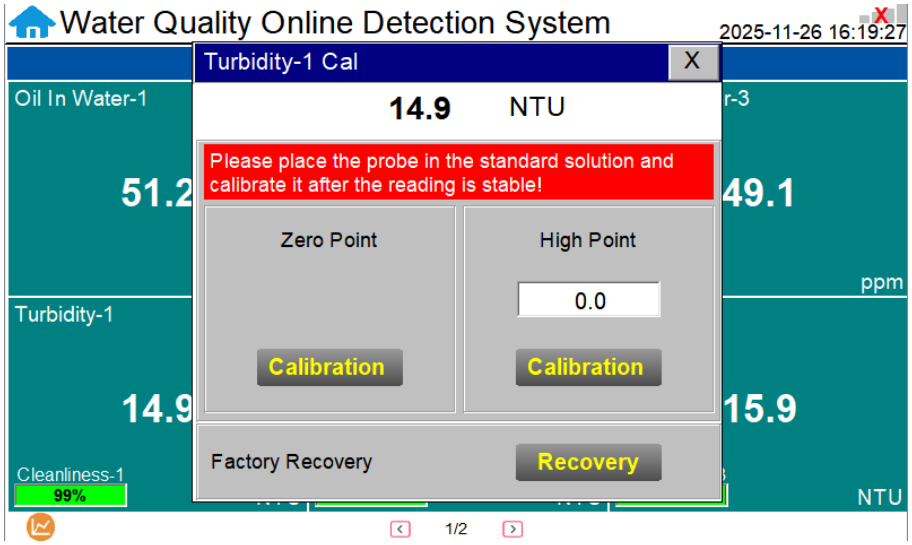


Figure. 30 Turbidity Calibration

One Point Calibration

Close the water inlet valve, drain all the water in the pipeline, take out the sensor, put it in the calibration tee, and rinse it with deionized water or tap water 3 times. Then fill beaker with Pyxis Turbidity Standard Solution and cover with a towel to shield from light…then enter the value of the standard solution in the "High Point" screen and click the "Calibration" under "High point" to start the high calibration. After the calibration success pop-up box pops up, the calibration is successful. ***NOTE*** *If deposits are present on the inside of the optical channel you may consider soaking the sensor in Pyxis Probe Cleaning Solution Kit (P/N SER-01) for 30 minutes, then brushing with the provided pipe cleaner brush of the kit.*

Two Point Calibration

Close the water inlet valve, drain all the water in the pipeline, take out the sensor, put it in the calibration tee, and rinse it with deionized water or tap water 2-3 times. Then fill beaker with deionized water and cover with a towel to shield from light…then click "Calibration “under the “Zero Point” to start the zero calibration.

Then, repeat the above steps and flush the sensor 2-3 times with deionized water or tap water. Then fill beaker with Pyxis Turbidity Standard Solution and cover with a towel to shield from light…then enter the value of the standard solution in the "High Point" screen and click the "Calibration" under "High point" to start the high calibration. After the calibration success pop-up box pops up, the calibration is successful. ***NOTE*** *If deposits are present on the inside of the optical channel you may consider soaking the sensor in Pyxis Probe Cleaning Solution Kit (P/N SER-01) for 30 minutes, then brushing with the provided pipe cleaner brush of the kit.*

3.8. Alarm Browsing

Click the **"Alarm Browsing"** button on the main interface to enter the alarm browsing interface.

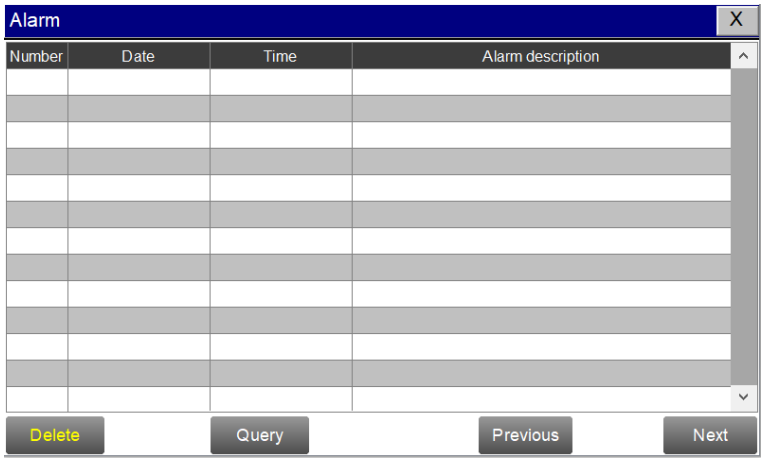


Figure. 31 Alarm Browsing

In this interface, the user can browse all alarm signals. Drag the right scroll bar to slide up and down to view historical alarm records. You can also click **"Previous"** and **"Next"** to turn pages quickly.

Click Query, enter the number in the pop-up box and query, you can quickly view the alarm problem of the corresponding number.

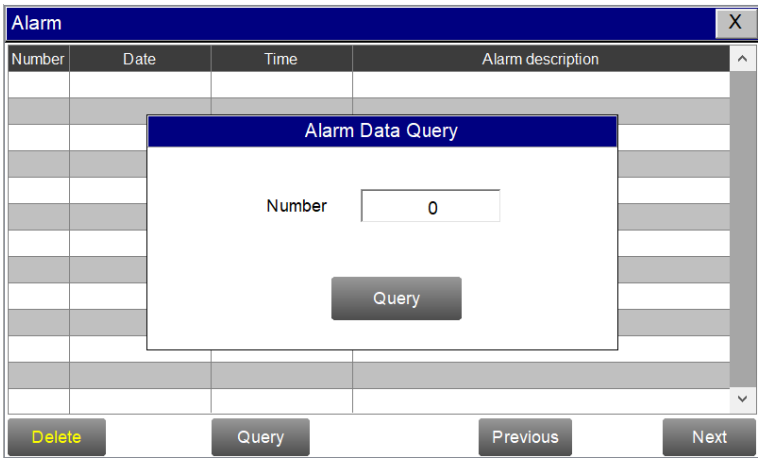


Figure. 32 Alarm Data Query Interface

After clicking the delete button in the lower left corner, all alarm records will be deleted. After clicking delete, you need to exit the current interface and enter again, the historical data in the data report will be cleared.

3.9. Historical Data – Query, View & USB Download

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

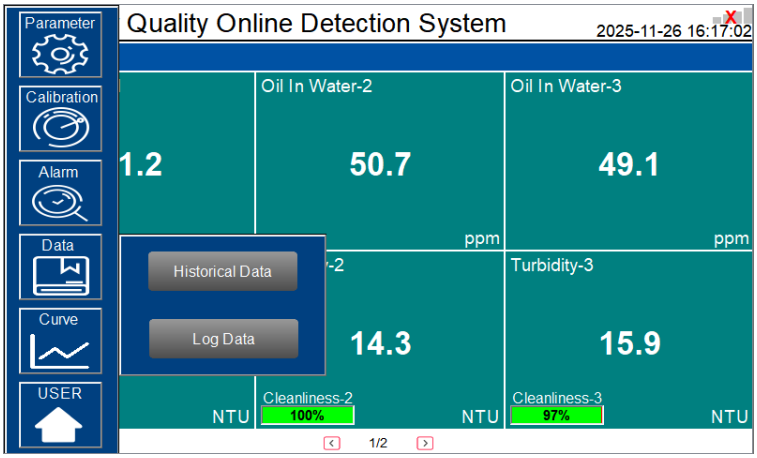


Figure. 33- Historical Data

Historical Data

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

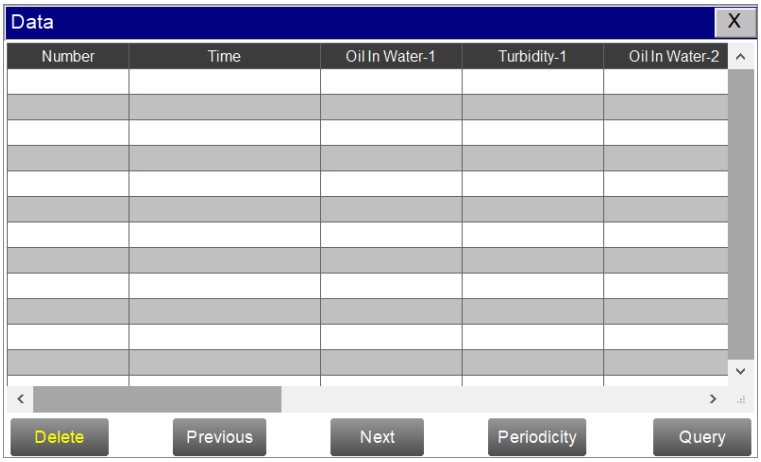


Figure. 34 - Historical Data Screen

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. 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.

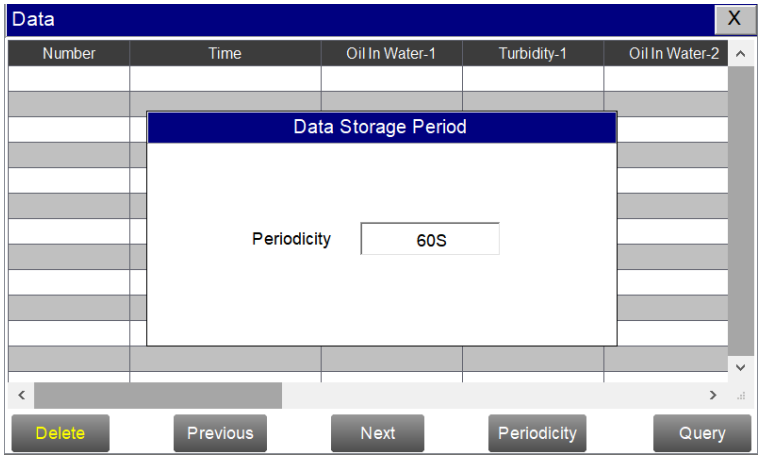


Figure. 35 - Data Storage Cycle Time Setting

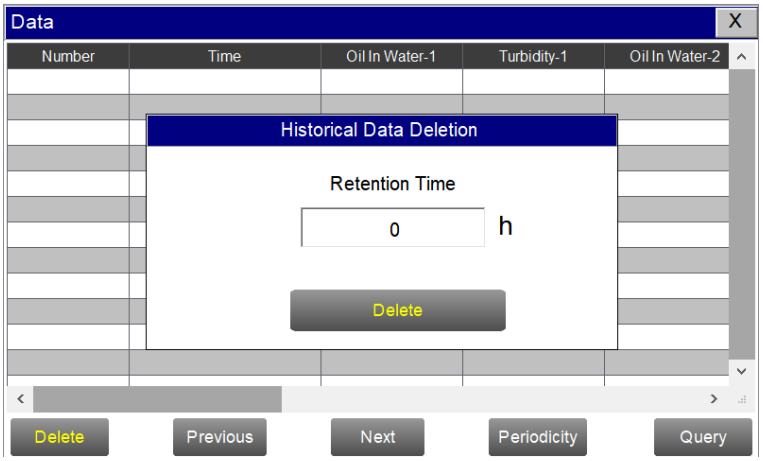


Figure. 36 - History Data Deletion Screen

Click the **"Query"** button in the lower right corner, enter the start time and end time and then click the **"Query"** button. ***NOTE*** *The start time and end time must be filled in exactly and completely according to the system time format of Year / Month / Day / Hours / Minutes / Seconds.*

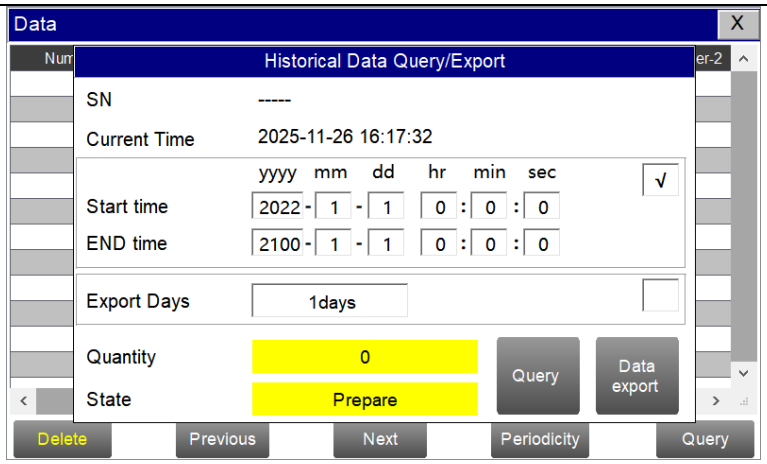


Figure. 37 - Historical Data Query and Export Screen

Insert a USB disk behind the HMI 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.

NOTE *Please be sure to use and empty (no saved files) FAT32 formatted USB disk with data capacity of 32-64GB.*

When a Quantity value appears, refer to the following table to troubleshoot the issue.

Quantity	Description
-1001	Progress or control data object type is incorrect
-1004	Group object name does not exist or the group object does not have the save property
-1020	The start time of the export is greater than the end time
-1021	USB flash drive is not inserted
-1022	Only one export task is allowed at the same time
-1023	The number of records read is 0
-1024	File operation failed
-1025	Export path is empty
-1026	Export path is not legal
-1027	Incorrect time format
-1028	Unsupported export mode

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.

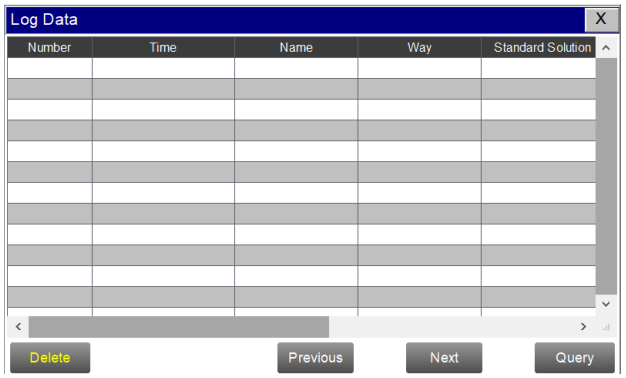


Figure. 38 - Calibration Log

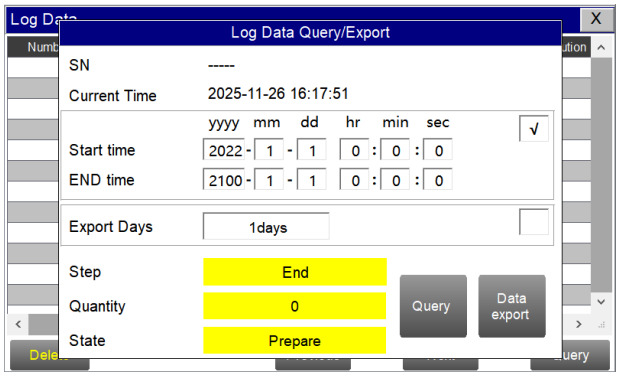


Figure. 39 - Calibration Log Query/Export

3.10. Historical data curve

Click the **"Historical Curve"** button in the menu bar to enter the trend curve interface. The ordinate is the monitoring value of the sensor, and the abscissa is the monitoring time. You can click the button below the abscissa to browse and view the values in different time periods. Clicking the Y-axis range will pop up the Y-axis range as shown in the figure. Enter the minimum and maximum values to change the displayed value of the Y-axis of the curve.

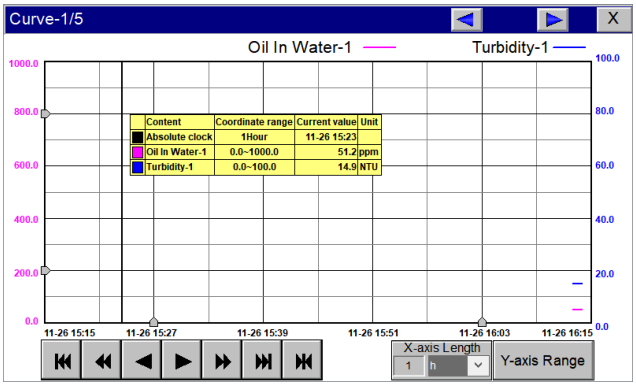


Figure. 40 Historical Curve Interface

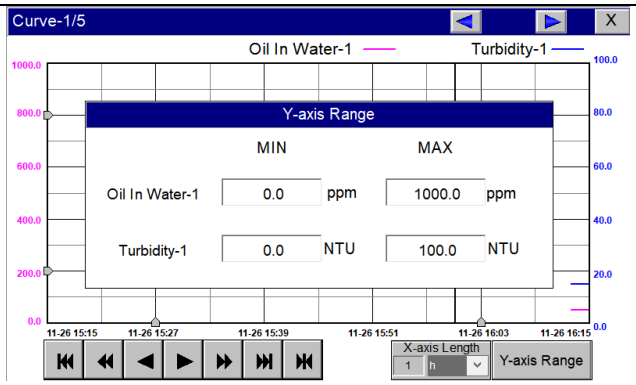


Figure. 41 Y Axis Range Setting

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. 42 Button Introduction

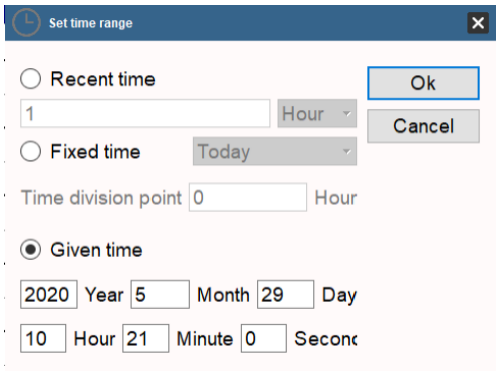


Figure. 43 Time Setting Interface

3.11. User Management

Click the **"User Management"** button on the menu bar, users can edit user information in this interface and switch between Chinese and English.

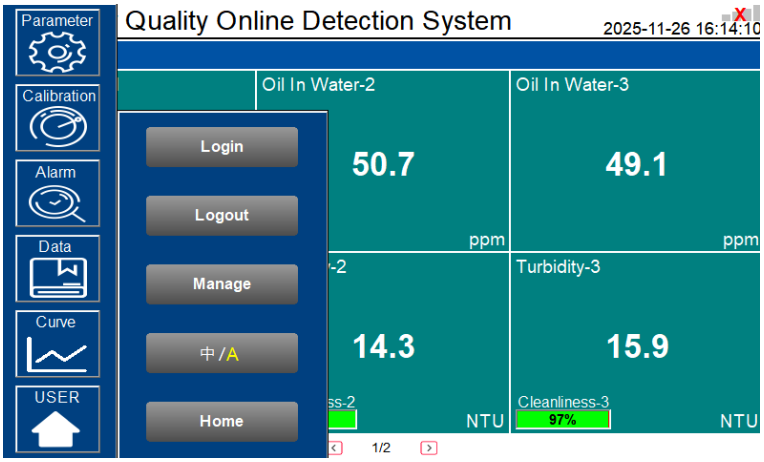


Figure. 44 User Management

Logout can make the user log out, and can only view the real-time reading, but cannot perform parameter setting and other operations.

Click **“Admin”** to enter the user management interface, where you can add users, modify passwords and other operations. Users can set their own user name and password, and select the user group to which they belong. Among them, only users in the administrator group can set parameters such as calibration.

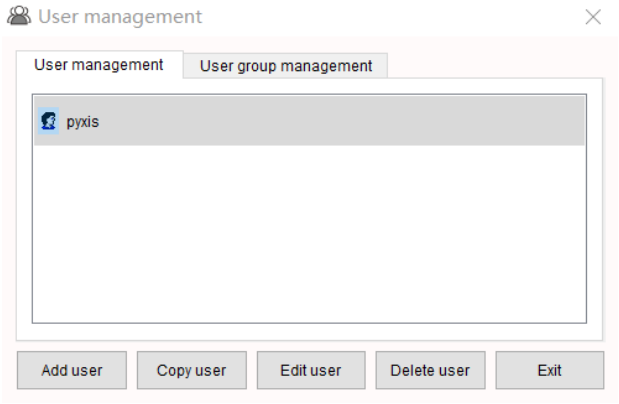


Figure. 45 User management interface

Change Password: Select the user to be changed, then click the **“Change 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 the user does not want to set a password, the password can be deleted and saved.*

4. Modbus Register Addresses

Table. 1 UC-100A Communication address

No.	Define	Address	Format	Model	Unit	Note
1	OIW-1	1	float	Read only	ppm	Data format: ABCD
2	OIW-2	3	float	Read only	ppm	
3	OIW-3	5	float	Read only	ppm	
4	OIW-4	7	float	Read only	ppm	
5	OIW-5	9	float	Read only	ppm	
6	Turbidity-1	11	float	Read only	NTU	
7	Turbidity-2	13	float	Read only	NTU	
8	Turbidity-3	15	float	Read only	NTU	
9	Turbidity-4	17	float	Read only	NTU	
10	Turbidity-5	19	float	Read only	NTU	
11	Cleanliness-1	21	uint	Read only	%	
12	Cleanliness-2	22	uint	Read only	%	
13	Cleanliness-3	23	uint	Read only	%	
14	Cleanliness-4	24	uint	Read only	%	
15	Cleanliness-5	25	uint	Read only	%	
16	OIW1_lower limit alarm	26	uint	Read only		
17	OIW1_upper limit alarm	27	uint	Read only		
18	Tur1_lower limit alarm	28	uint	Read only		0: normal 1: Alarm
19	Tur1_upper limit alarm	29	uint	Read only		
20	OIW1_cleanliness lower limit alarm	30	uint	Read only		
21	OIW1_cleanliness upper limit alarm	31	uint	Read only		
22	OIW1_sensor communication abnormal	32	uint	Read only		
23	OIW2_lower limit alarm	33	uint	Read only		
24	OIW2_upper limit alarm	34	uint	Read only		
25	Tur2_lower limit alarm	35	uint	Read only		
26	Tur2_upper limit alarm	36	uint	Read only		
27	OIW2_cleanliness lower limit alarm	37	uint	Read only		
28	OIW2_cleanliness upper limit alarm	38	uint	Read only		

29	OIW2_sensor communication abnormal	39	uint	Read only	
30	OIW3_ Lower limit alarm	40	uint	Read only	
31	OIW3_ Upper limit alarm	41	uint	Read only	
32	Tur3_ Lower limit alarm	42	uint	Read only	
33	Tur3_ Upper limit alarm	43	uint	Read only	
34	OIW3_ Cleanliness lower limit alarm	44	uint	Read only	
35	OIW3_ Cleanliness upper limit alarm	45	uint	Read only	
36	OIW3_ Sensor communication abnormal	46	uint	Read only	
37	OIW4_ Lower limit alarm	47	uint	Read only	
38	OIW4_ Upper limit alarm	48	uint	Read only	
39	Tur4_ Lower limit alarm	49	uint	Read only	
40	Tur4_ Upper limit alarm	50	uint	Read only	
41	OIW4_ Cleanliness lower limit alarm	51	uint	Read only	
42	OIW4_ Cleanliness upper limit alarm	52	uint	Read only	
43	OIW4_ Sensor communication abnormal	53	uint	Read only	
44	OIW5_ Lower limit alarm	54	uint	Read only	
45	OIW5_ Upper limit alarm	55	uint	Read only	
46	Tur5_ Lower limit alarm	56	uint	Read only	
47	Tur5_ Upper limit alarm	57	uint	Read only	
48	OIW5_ Cleanliness lower limit alarm	58	uint	Read only	
49	OIW5_ Cleanliness upper limit alarm	59	uint	Read only	
50	OIW5_ Sensor communication abnormal	60	uint	Read only	
51	Analog sensor communication abnormal	61	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

5. Contact Us

Contact us if you have questions about the use or maintenance of the analyzer:

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