

BT8800S/BT8800SPRO

Self-Contained Water Level Gauge/Plug-In
Self-Contained Gauge

.

User Manual



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1. Product Introduction

1.1 Product Overview

The BT8800S self-capacitive/BT8800SPRO plug-in tide gauge is a battery-powered water-level monitoring instrument that records water depth (pressure) and temperature for extended periods.

It includes water level and temperature sensors, built-in large-capacity FLASH memory, and a high-capacity, long-life lithium battery; the battery is easy to replace, making it suitable for water level and water temperature measurement in surface water, groundwater, and marine environments.

Features:

- BT8800SPRO plug-in: dual-mode operation, self-capacitive/online mode can be switched to adapt to different application occasions (BT8800S only self-capacitive mode)
- Easy to replace the battery;
- Minimum acquisition interval 1S;
- High stability: using high-quality and high-stability pressure sensing elements
- High accuracy: water level accuracy 0.05%F.S, resolution 1mm; temperature accuracy $\pm 0.2^{\circ}$, resolution 0.1°C ;
- Multi-function: internal built-in battery and 128M memory, can collect and store data regularly;

- Full Parameters: water level, temperature, water pressure, time and other factors are monitored and recorded simultaneously;
- Signal standard: RS485; data is exported in a special format for the host computer software;
- Protection level: IP68 protection;
- Temperature compensation: full-range digital calibration, full-temperature zone temperature error compensation;
- Sensor electrical characteristics: over-voltage protection, surge voltage protection and power supply polarity reverse connection protection to avoid electrical damage caused by operating errors;
- This model is an absolute pressure product, and can be equipped with an atmospheric pressure gauge of the same model as atmospheric pressure compensation, which will increase the system accuracy.

1.2 Application areas

- Groundwater level and temperature data monitoring
- Urban flood control liquid level monitoring
- Reservoir and dam water level real-time monitoring
- Ocean, lake, surface runoff water level monitoring
- Unmanned hydrological monitoring station
- Real-time liquid level monitoring in tanks

➤ On-site liquid level monitoring in industrial control systems

1.3 Product specifications

Dimensions

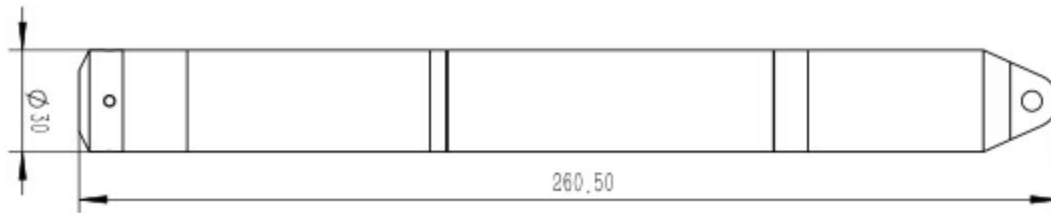


Figure 1-1 BT8800SPRO dimensions

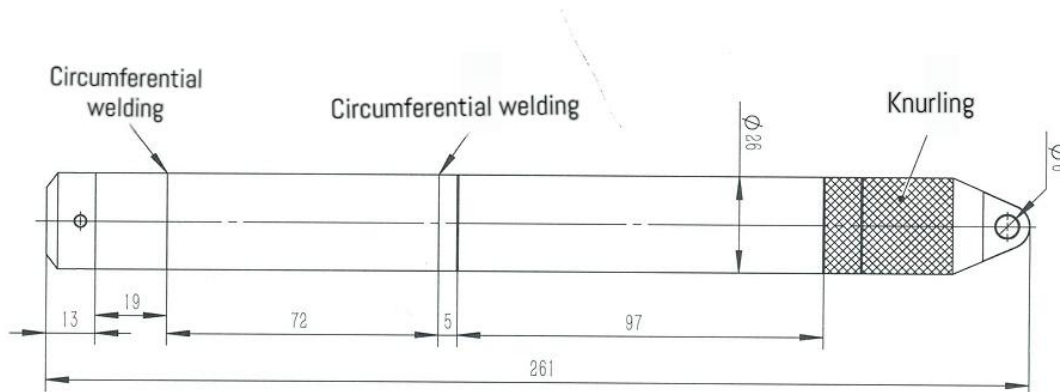


Figure 1-2 BT8800S dimensions

1.4 Basic performance parameters

	Parameter item	Description
Main performance indicators	Sensitive element	High stability Long-term use low drift
	Level Range	0 ~ 10mH ₂ O...300m H ₂ OAny range can be selected
	Level Accuracy	0.05%F.S (0 ~ 50℃)
	Level Resolution	1mm

	Stability	0.05% F.S/YEAR
	Overload	2X F·S
	Temperature accuracy	$\pm 0.2^{\circ}\text{C}$
	Temperature resolution	0.1 $^{\circ}\text{C}$
	Internal battery life	10 years (record once/60 minutes)
	Storage capacity	128M built-in storage, can record 1000000 data (time+temperature+pressure+water level)
	Real-time clock	< ± 5 minutes/year Real-time clock < ± 5 minutes/year
Electrical characteristics	Temperature compensation range	0 ~ 50 $^{\circ}\text{C}$
	Working temperature	-10 ~ 80 $^{\circ}\text{C}$
	Power supply	Internal battery: 2.7 ~ 3.6VDC Battery can be replaced by yourself
	Power protection	Anti-reverse connection, anti-2KV

		surge, over-voltage protection
	Output method	RS485 to USB, download data to the computer through the adapter
Structural characteristics	Cable material	Steel wire rope hanging installation, no cable is used
	Shell material	Titanium alloy/316L
Environmental characteristics	Protection level	IP68
	Weight	About 300 grams (excluding cable)
	Environmental vibration	Withstand the vibration test specified in GB/T935
	Free fall	Withstand the drop test specified in GB/T9359
	Electromagnetic environment	Meets GB/T17626.8 Level 3
	Mean time between failures	Not less than 30000h

1.5 Unpacking and Inspection

1. After unpacking, check whether the documents and accessories are complete according to the contents of the packing list (as shown in the table below).

2. Observe whether the water level meter is damaged due to

transportation, so as to properly handle it.

No.	Name	Quantity
1	Packing list	1
2	Product manual	1
3	Product certificate	1
4	Adapter	1
5	BT8800S/BT8800SPRO self-contained/plug-in tide level meter	1

3. Software Download



It is recommended to use a browser to scan the code.

2. Installation and commissioning

2.1 On-site installation

Before installation and use, please carefully read the "BT8800S Self-Contained/BT8800SPRO Plug-In Tide Meter User Manual" and be sure to install and debug in accordance with the requirements of the manual.

1. Usage precautions

- 1) The bottom of the product should be as far away from the bottom of the water body as possible and installed vertically as much as possible to avoid sludge and debris at the bottom blocking the water inlet of the product probe to ensure measurement accuracy;
- 2) It is strictly forbidden to remove the water guide plug for use, and it is strictly forbidden to touch the product pressure diaphragm with hard objects;
- 3) The product should be slowly placed in the well logging or other application site, and it is strictly forbidden to throw it at will to avoid water hammer damage to the pressure sensor;
- 4) The maximum amplitude of the measured water body is preferably within the range of 70% to 90% of the full range of the product to ensure sufficient resolution, accuracy and necessary safety overload capacity;

2. Electrical connection

The output interface of the BT8800S Self-Contained/BT8800SPRO plug-in tide meter is RS485 digital output, and the product is connected to the adapter through a four-core waterproof connector.

3. Wiring definition

- 1) Reader wiring definition, as shown in Figure 2-1:

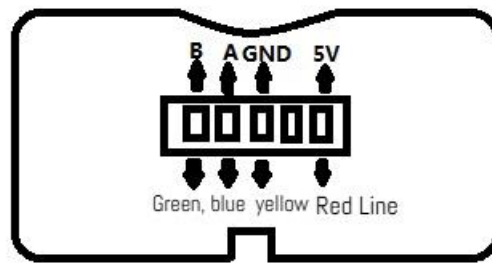


Figure 2-1 Reader wiring definition

2) LEMO connector wiring definition

No.	Wire Color	Definition
1	Red	5V+
2	Blue	RS485+
3	Green	RS485-
4	Yellow	GND

2.2 Product debugging

1. Product testing

Before formal debugging, the [BT8800S PRO host computer software] should be used for testing. Only one product is allowed to be connected during the test. The specific test method is as follows:

- 1) The tide meter is connected to the adapter through a four-core aviation plug, and the adapter is connected to the USB port of the PC;
- 2) Run the [BT8800S PRO host computer software], select the COM port where the adapter is located, and click the red button to connect the device. The button turns green to indicate a successful connection (for

specific usage of the host computer software, see Chapter 4);

3) Click the [Find Device] button of the host computer software, and the device address displays the Modbus device communication ID. At this time, the [Read Current Data] button becomes clickable. Click the button to read a piece of data. The collected temperature, pressure, and water level data can be seen in the dashboard or data table above the software, as shown in Figure 2-2, indicating that the product functions normally and can continue to be installed and debugged;

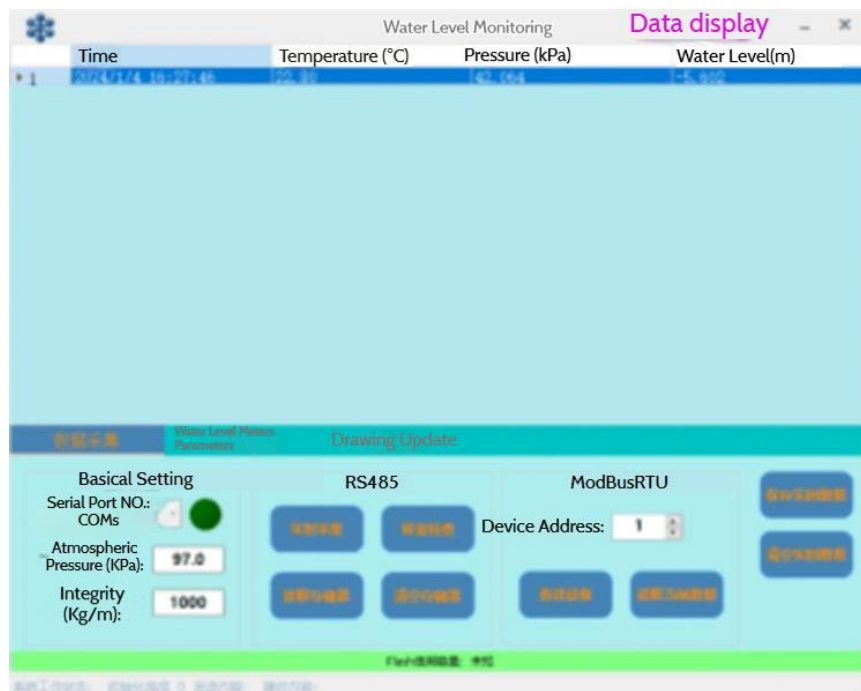


Figure 2-2 BT8800S PRO host computer software interface

(This is for reference, we can show you the English interface in the future.)

2. Product debugging

After the product detection is completed and the function is confirmed to be normal, the product can be debugged and set. This product supports RS485 serial port data collection, Flash capacity check, Flash

data reading, and Flash storage clearing. At the same time, this product supports the standard ModBus-RTU protocol. Users can make relevant settings for the product through the host computer, or read data and set parameters through other tools that support the Modbus-RTU protocol. According to the product protocol, users can read and write product registers to complete access to function registers, data registers and status registers. The main operations are as follows:

- 1) Basic parameter settings: device communication address settings, sampling intervals, etc.;
- 2) Calibration parameter settings: measured liquid density settings, current time calibration, etc.;
- 3) Test data reading: temperature, pressure, water level and other detection parameters reading;
- 4) Status register reading: read the status register to understand the product operation status.

Note: For details on product software use and parameter settings, please refer to Chapter 4.

3. Reader Instructions

The complete form of the reader is shown in Figure 3-1:



Figure 3-1: Reader

3.1 Reader Function

The reader converts the USB interface on the computer to an RS485 interface, allowing the RS485 node to be directly connected to the computer. When used on site, there is no need to provide a separate power supply, and the 5V power supply provided by the adapter can be used directly; the wiring terminals are shown in Figures 3-2 and 3-3:



Figure 3-2: Water level meter connection plug



Figure 3-3: Connect to computer USB socket

3.2 Install the driver

The adapter uses the FT232 chip for bus conversion. When using it, you must first install the driver (if it has been installed, you do not need to install it). Find the "USB to RS485 adapter driver.rar" compressed file in the installation CD and unzip it to the specified location of the computer, such as D:\ drive; as shown in Figure 3-4:



Figure 3-4: USB to RS485 adapter driver

Insert the USB cable of the adapter into any USB port of the computer. At this time, the computer prompts to install a new USB device. Just point the driver location to the directory just unzipped;

After successful installation, in the device manager, you can see the information in the port (COM and LPT) as shown in Figure 3-5:

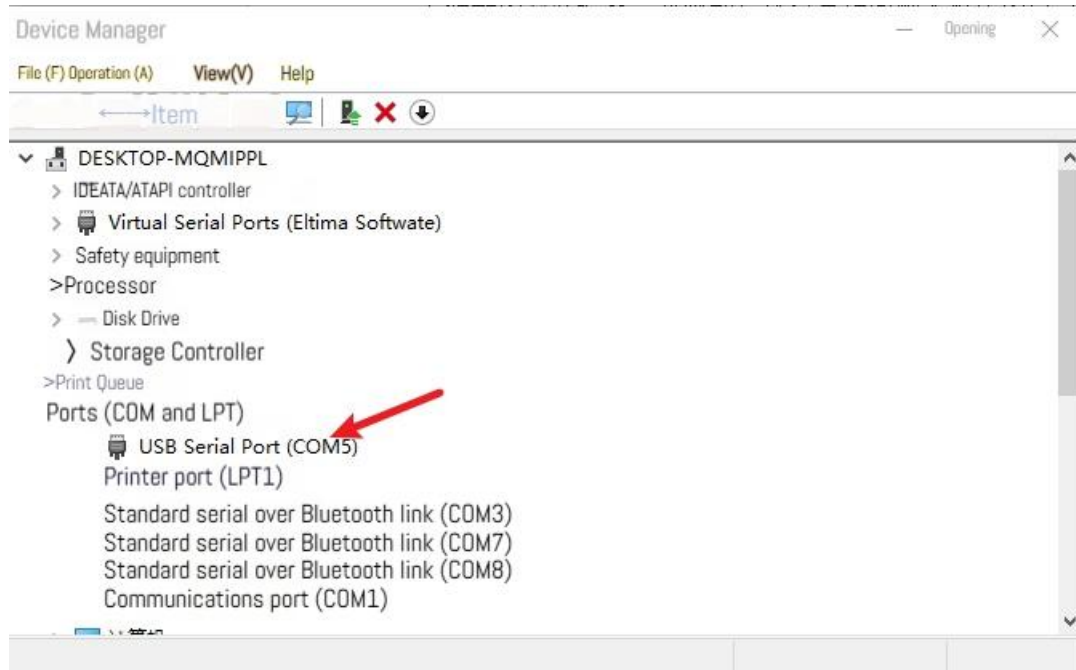


Figure 3-5: Device Manager displays USB Serial Port

Please select the corresponding COM port when using the [BT8800S PRO host computer software] that comes with this product.

4. Software use and parameter setting

4.1 Select COM port number

The default baud rate of this product is 9600, no parity, and stop bit 1.

The baud rate and other parameters are not supported for modification.

When you run the [BT8800SPRO host computer software] program for the first time (hereinafter referred to as the host computer software), the display interface is shown in Figure 4-1:

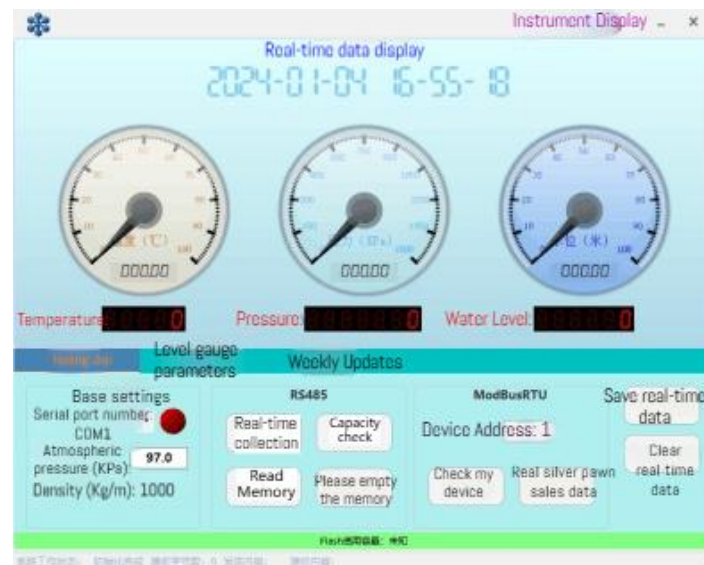


Figure 4-1: Display interface of the first run of the host computer software

Connect the computer to the reader, select the correct COM port number and click the red button. After successfully connecting to the reader, the button turns green, and the [Real-time Collection], [Capacity Check], [Read Memory], [Clear Memory], [Search Device] and other buttons are activated. At this time, you can connect this product to the reader, set the atmospheric pressure and liquid density values of the test environment, and then you can collect data, as shown in Figure 4-2:

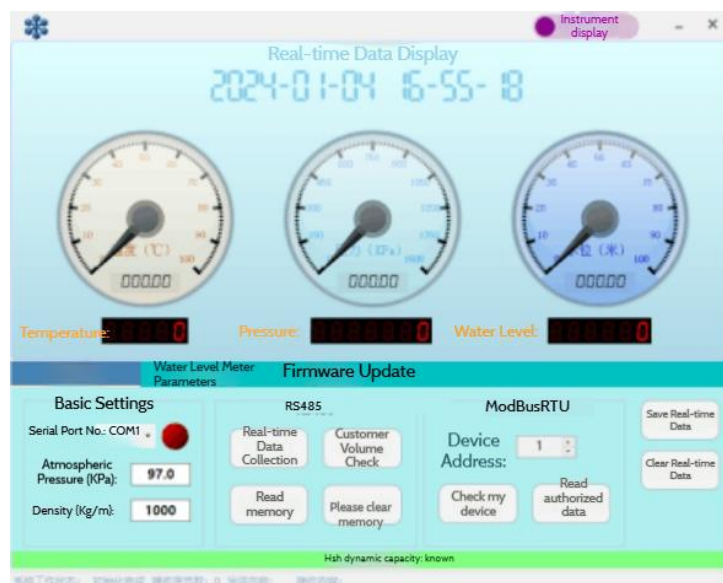


Figure 4-2: Open the serial port after correctly connecting the reader and the product

4.2 Parameter configuration

After correctly connecting the product, open the host computer software and switch to the [Water Level Meter Parameters] page to query the product information and set the ModBus-RTU communication address, sampling interval, and liquid density data. First, click the Read [Device Information] button. If the host computer software correctly reads the connected product information, the [Device Address], [Sampling Interval], and [Density] settings will become active, and the [Parameter Modification] button will be enabled, as shown in Figure 4-3. After making corresponding changes as required, click the [Parameter Modification] button. If the modification is successful, the host computer software will pop up a prompt message, as shown in Figure 4-4:



Figure 4-3: Water level meter parameter setting page



Figure 4-4: Parameter setting success prompt

4.3 Reading collected data

When using the real-time collection function, the host computer software switches to the [Data Collection] page, correctly sets the atmospheric pressure and liquid density, and then clicks the [Real-time Collection] button. The product then sends the temperature, pressure, and water level values through the serial port at the set interval. At this time, other function buttons will be disabled to ensure that the data transmission process is not disturbed. If you need to perform other operations, please click [Close Real-time Collection] to stop the real-time collection function, as shown in Figure 4-5:

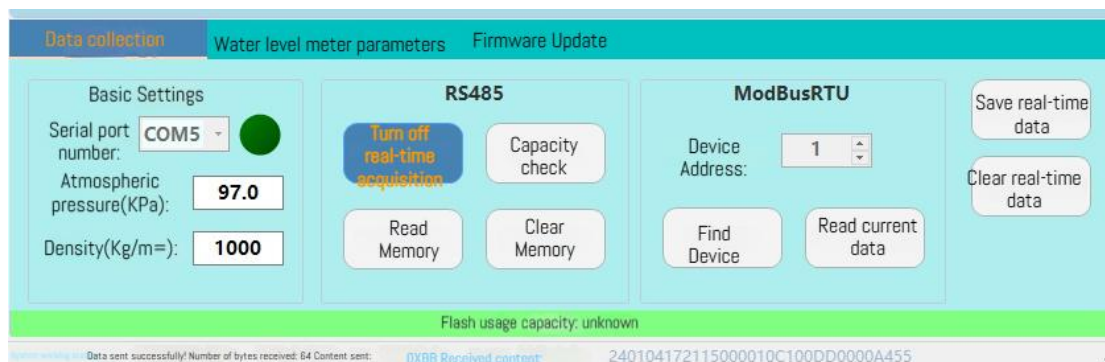


Figure 4-5: Real-time acquisition function enabled

The host computer software contains two data display modes: instrument mode and data table mode, which can be switched through the [Instrument Display]/[Data Display] slider in the upper right corner, as shown in Figure 4-6 and Figure 4-7:



Figure 4-6: Instrument display mode

	Time	Temperature (C)	Pressure (kPa)	Water level (m)
68	2024/1/4 17:24:27	22.00	42.051	-5.603
69	2024/1/4 17:24:30	21.90	42.058	-5.603
70	2024/1/4 17:24:33	22.00	42.056	-5.603
71	2024/1/4 17:24:36	22.00	42.054	-5.603
72	2024/1/4 17:24:39	21.90	42.053	-5.603
73	2024/1/4 17:24:42	21.90	42.042	-5.604
74	2024/1/4 17:24:45	21.90	42.058	-5.603
75	2024/1/4 17:24:48	22.00	42.057	-5.603
76	2024/1/4 17:24:51	21.90	42.039	-5.604
77	2024/1/4 17:24:54	22.00	42.047	-5.604
78	2024/1/4 17:24:57	22.00	42.056	-5.603
79	2024/1/4 17:25:00	22.00	42.073	-5.601
80	2024/1/4 17:25:03	21.90	42.046	-5.604
81	2024/1/4 17:25:06	22.00	42.070	-5.601
82	2024/1/4 17:25:09	21.90	42.041	-5.604
83	2024/1/4 17:25:12	21.90	42.071	-5.601
84	2024/1/4 17:25:15	21.90	42.038	-5.605
85	2024/1/4 17:25:18	22.00	42.049	-5.603
86	2024/1/4 17:25:21	22.00	42.052	-5.603
87	2024/1/4 17:25:24	22.00	42.044	-5.604

Figure 4-7: Data display mode

This product supports reading a single piece of data through the Modbus protocol. After closing the real-time acquisition, click the [Find Device] button. After the host computer software finds the communication address of the product, activate the [Read Current Data] button. Click this button to read the data collected by the product most recently and display the data on the dashboard and data table.

Export of real-time collected data: When the host computer software collects real-time data, the [Save Real-time Data] button on the right is activated. Users can save the collected data as an xlsx table as needed.

Users can click the [Clear Real-time Data] button to clear the data collected by the host computer as needed. The above operations do not

affect the recording of internal data of the product.

4.4 Export built-in storage data

This product has a built-in large-capacity memory. Under normal power supply conditions, the temperature, pressure, and water level data are collected according to the set sampling interval and recorded in the built-in memory. The data can be exported through the host computer [Read Memory] button. The operation takes different time depending on the amount of data in the memory. Please wait patiently for the data to be exported. The host computer software cannot be operated during the export process and will return to normal after the export is completed. Users can also check the usage percentage of the built-in storage through the [Capacity Check] button. The query results will be displayed in the capacity display area below, as shown in Figure 4-8:

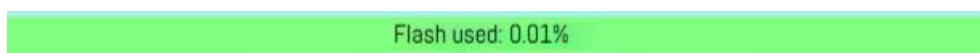


Figure 4-8: Flash capacity query

4.5 Clear internal storage

If you need to clear the internal storage space during the use of this product, you can click the [Clear storage] button to initialize the internal storage space after correctly connecting the product and the host computer. This operation is irreversible. Please confirm that the internal data has been exported before executing it. The system will give a prompt before executing the clearing task, as shown in Figure 4-9:



Figure 4-9: Clear memory prompt

4.6 Firmware Update

The internal software of this product can be updated through the host computer to achieve the addition and change of functions. Under normal circumstances, it is not recommended for users to perform upgrade operations to prevent product firmware damage and maintenance costs. Under specific needs, open the host computer software, switch to the [Firmware Update] page, first click [Select Upgrade File], then the [Program Upgrade] button is activated, then connect the product to the host computer, and click [Program Upgrade] at the same time (within one second of connecting the product). If the operation is correct, the system will start to upgrade. If an error occurs during the upgrade process, there is no need to disconnect the product connection, just reselect the upgrade file and upgrade.

Note: Products that enter the upgrade program but fail to complete the

upgrade correctly will not be able to record and collect data, and need to upgrade the program correctly before they can work normally.

Note: Please specify the model, range and shell material when ordering.

Note: Self-contained water level gauge products are absolute pressure measurements. At the same altitude, an atmospheric pressure gauge can be added for atmospheric pressure calibration.

5. Battery replacement steps

5.1 The first step is to open the upper cover and battery shell, as shown in the figure below



5.2 Remove the fixing tape and take the battery out of the battery compartment as shown in the figure



5.3 Remove the original battery and install the new battery. Define the wiring: the white wire is the positive pole and the black wire is the negative pole.



5.4 After replacing the battery, put the battery into the battery

compartment, restore it to the shape in Figure 1, and install the battery housing and upper cover.

Note: Do not touch the red, yellow, blue and green wires connected to the LEMO connector when replacing the battery.

6. Troubleshooting and storage

6.1 Troubleshooting

The device does not communicate	Check whether the external power supply is turned on
	Check whether the electrical interface is connected correctly
	Check whether the device address is set correctly
	If the above method still cannot solve the problem, please contact the manufacturer
The data deviation is large.	The short time of immersion in the liquid (recommended >10 minutes) affects the accuracy
	Check whether the water inlet of the device is blocked
	If the above method still cannot solve the problem, please contact the manufacturer
No stored data	Confirm the battery power and replace the battery

6.2 Requirements for host computer software environment

The host computer software for this product is written in C#+.net Framework 4.8 framework. Microsoft .net Framework 4.8 framework and VC++ 2015 runtime must be installed in the host computer. It is recommended to use the win10 operating system. The framework and runtime installation packages are provided together with the host computer software.

6.3 Transportation and storage

1. Avoid serious bumps during transportation of this product, and take waterproof and moisture-proof measures;
2. The product storage place should avoid corrosive gas erosion;
3. The product should be stored in an environment with a temperature of 0-50°C and a humidity of 50%-95%;
4. Strong vibration and impact are strictly prohibited.

7. Communication protocol

1. RTU transmission mode

The default serial port communication configuration of the recorder is:

9600bps, no parity, 1 stop bit. Address: 1.

Communication	Function	Data	CRC16
address	code	stream	checksum

1 byte	1 byte	0 ~ 252 bytes	2 bytes
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Subnode address:

Slave device address, 1~247 (0x01~0xF7)

Function code:

Indicates the request operation command to be generated by the slave, which can be a standard or user-defined function code, with a value of 1~127 (public function code, custom function code, reserved function code), and each value corresponds to an operation command

Data stream:

Data information required to complete the request command operation, such as address, data, etc., with a maximum of 252 bytes

CRC16:

CRC check bit, low byte first, high byte last

In MODBUS-RTU transmission mode, the host request frame and slave response frame have the same structure, and the subnode address and function code content are the same, but the data stream and CRC check code are different

2. Function code description

The function code in the MODBUS-RTU protocol specifies the protocol data access operation type, which can complete single-bit operation, 16-bit operation (register operation), file record access and other functions.

The recorder supports four function code responses, namely querying the slave address, reading register operation, and writing register operation:

Function code	Function definition
6EH	Query slave communication address
03H	Read single or multiple continuous registers
10H	Read single or multiple continuous registers

The recorder only supports the above three function codes. When sending an unsupported function code, the product will return an abnormal response, indicating that the function code does not exist. The following content will describe the functions and usage of the three function codes in detail. In all the following examples, the data in the request/response frame is hexadecimal by default. Users can set the corresponding XX (each XX represents 1BYTE) content as needed.

2.1. Query address

Function: Query the device communication address. When the device communication address changes and the user does not know the current address, the 6EH function code can be used to query, that is, read the value in the device address register 0x0012).

6EH Request frame format:

Slave address	Function code	Register address	Number of registers	CRC check code
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1 BYTE	1 BYTE	2 BYTE	2 BYTE	2 BYTE
FF	6E	00 12	00 01	9C 18

Slave address:

fixed to 0xFF.

Register address:

0x0012, which is the product address register address.

The 6EH function code request frame data is a fixed value. Users can use this command to test whether the product is normal.

6EH Response frame format:

Slave address	Function code	Number of returned bytes	Register value	CRC check code
1 BYTE	1 BYTE	1 BYTE	2 BYTE	2 BYTE
FF	6E	02	00 XX	check code

Register value: The lower eight bits of the register value are the device address.

2.2 03H function code

Function: read single or multiple registers. This function code can be used to read the product's parameter register, data register and status register.

03H Request frame format:

Slave address	Function code	Starting Address	Register value	CRC check code
---------------	---------------	------------------	----------------	----------------

1 BYTE	1 BYTE	2 BYTE	2 BYTE	2 BYTE
XX	03	XX XX	XX XX	Check code

Slave address:

The valid address of the currently connected device (0x01 to 0xF7).

Start address:

The address of a single register to be read or the first address of multiple consecutive register blocks.

Number of registers:

0x0001 for a single register, and the actual number of registers N for multiple registers.

03H Response frame format:

Slave address Function code Number of bytes Register content CRC
check code

Slave address	Function code	Number of bytes	Register content	CRC check code
1 BYTE	1 BYTE	1 BYTE	N*2 BYTE	2 BYTE
XX	03	XX XX	XX.....XX	Check code

Slave address:

the same as the slave address in the request frame.

Number of bytes:

the return value is the number of registers N in the request frame multiplied by 2, that is, N*2.

Register content:

the content of the register to be read in the request frame, with the high byte first and the low byte last.

Example of using the 03H function code:

To read the water level, temperature and water pressure values from the product with address 95, you can use the 03H function code to read 4 consecutive registers (2 for water level, 1 for temperature and 2 for water pressure) with a starting address of 0x0001. The device request/response data frame is as follows:

Request data frame:

Slave address Function code Starting address Number of registers CRC check code

Slave address	Function code	Starting address	Number of registers	CRC check code
5F	03	00 01	00 05	D9 77

Response data frame:

Slave address	Function code	Number of bytes	Register content	CRC check code
5F	03	0A	00 00 00 00 01	36 7E

			23 00 00 00 00	
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2.3 10H function code

Function:

write single or multiple registers. This function code can be used to configure the parameter register of the product to complete the parameter settings such as device address, serial port format, sampling interval, etc.

10H request frame format:

Slave Address	Function Code	Starting Address	Number of Registers	Number of Bytes	Configuration Word	CRC Check Code
1 BYTE	1 BYTE	2 BYTE	2 BYTE	1 BYTE	N*2 BYTE	2 BYTE
XX	10	XX XX	XX XX	XX	XX.....XX	Check Code

Slave address:

The valid address of the currently connected device (0x01~0xF7).

Start address:

The address of a single register to be set by the command or the first address of a continuous register block.

Number of registers:

0001 for a single register, and the actual number of registers N for

multiple registers.

Number of bytes:

The amount of register data N to be configured by the command multiplied by 2.

Configuration word:

The data content to be written into the specified parameter register, with the high byte first and the low byte last.

10H Response frame format:

Slave address	Function code	Number of bytes	Register content	CRC check code
1 BYTE	1 BYTE	2 BYTE	2 BYTE	2 BYTE
XX	10	XX XX	XX XX	check code

Starting address:

the starting address in the request frame.

Number of registers:

the number of registers in the request frame.

Example of using 10H command:

Configure the baud rate of the slave device with address 95 to 9600bps and the parity bit to even parity. Then use the 10H function code to configure 2 consecutive registers with the starting address of 0x0013.

From the parameter register list, the baud rate register address is

0x0013, and the configuration word corresponding to 9600bps is 0x0001;

the parity bit register address is 0x0014, and the even parity configuration word is 0x0001. The device request/response data frame is as follows:

Request data frame:

Slave address Function code Starting address Number of registers

Number of bytes Configuration word CRC check code

5F 10 00 13 00 02 04 00 01 00 01 17 5F

Request data frame:

Function code Number of bytes Register content CRC check code

Slave address	Function code	Starting address	Number of registers	Number of bytes	Configuration words	CRC check code
5F	10	00 13	00 02	04	00 01 00 01	17 5F

Response data frame:

Slave address	Function code	Number of bytes	Register content	CRC check code
5F	10	00 13	00 02	BD 73

3. Register List

The internal registers of the recorder can be divided into 3 types: parameter register, data register, and status register. The register length in the following table refers to the number of registers. The data type is

divided into 2-byte UINT and 4-byte ULONG data. The register attributes are read-only (R) and read-write (R/W).

3.1、Parameter register

The general parameter register of the recorder stores the manufacturing information, communication settings, measurement settings and storage settings of the product. Some parameters are configurable (register attribute is R/W), and users can modify the configuration as needed; some are default factory settings (register attribute is R), and users cannot configure them; (the addresses in the list are all decimal)

Register name	Register address	Register length	Data type	Attribute	Description
Device serial number	0012	3	ULONG	R	6-byte integer, 12-bit serial number
Factory date	0015	2	ULONG	R	4-byte integer
Version number	0017	1	ULONG	R	2-byte integer, device version number
Communication address	0018	1	UINT	R/W	The address can be set to 1~247 Example: Change the address to 247 Register configuration value: 00 F7
Baud rate	0019	1	UINT	R/W	2-byte integer, baud rate setting: 1-9600、2-19200、 3-38400、4-57600

					Default value is 1, i.e. 9600bps
Check digit	0020	1	UINT	R/W	2-byte integer, parity bit setting: 0-odd parity, 1-even parity, 2-no parity (2 stop bits), 3-no parity (1 stop bit); Default value 3, no parity, 1 stop bit
Density	0022	2	ULONG	R/W	4-byte long integer, density of the liquid being measured, unit is kg/m ³ Example: configure the liquid density to 1000kg/m ³ Register configuration value: 00 00 03 E8

3.2. Data register

After each data acquisition, the recorder will write the water level, temperature, and water pressure into the data register. Users can use the 03H function code to read the corresponding parameters according to the register address. They can read a single parameter or multiple parameters at the same time.

Register Name	Register Address	Register Length	Data Type	Attribute	Description
Water level	0001	2	ULONG	R	Water level, 4-byte long integer, unit millimeter (mm), negative numbers

					are stored in binary complement, example: 00 00 03 E8 means the water level is 1000mm FF FF FF 9C means - 100mm
Water Temperature	0003	1	UINT	R	Water Temperature 0003 1 UINT R Temperature (°C), 2-byte integer, register value is signed data, actual temperature is register value divided by 10, Example: 00 6C means the temperature is 10.8°C FF 94 means the temperature is -10.8°C
Water Pressure	0004	1	UINT	R/W	Water Pressure 0004 1 UINT R/W Water Pressure (Pa), 4-byte long integer