

# Liquid Level Sensor (S-YW-01B)



## Features

- Strong anti-interference and long-term
- Anti-corrosion material, excellent anti-corrosion performance and durable
- Anti-blocking design, easy to clean
- Modbus-RTU RS485 protocol, it can be used with display device, PLC, inverter, recorder and other instruments
- The shell is made of stainless steel and durable, and with waterproof cable, safe to use

## Applications

- Reservoir detection
- High pool pump station
- River monitoring
- Marine monitoring station
- Dammed lake monitoring
- Wastewater treatment
- Deep well level monitoring
- Tank level monitoring

## Introduction

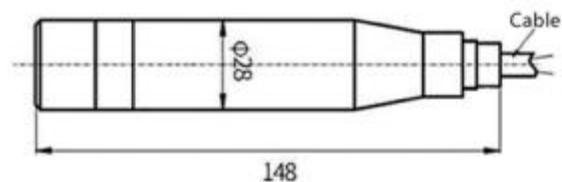
The liquid level sensor measures the height of the liquid and converting it to Modbus-RTU protocol. It works with a data logger or other device which supports RS485 Modbus-RTU protocol.

The liquid level sensor has a built-in high performance and highly sensitive silicon piezoresistive core. The internal chip converts the sensor millivolt signal into a standard protocol, which can be connected to a computer, control instrument, or PLC. It's small size and lightweight, and it has a stainless steel sealing structure that can work in a corrosive environment. The sensor is easy to install and has high anti-vibration and anti-impact performance. It can widely be used in process control, aviation, aerospace, automobile, medical equipment, HVAC, and other applications.

## Specifications

Product Model	S-YW-01B
Measurement Range	0 ~ 5 meters
Cable Length	5.3 meters
Output	RS485 Modbus-RTU Protocol
Accuracy	±0.25%F.S
Zero Temperature Drift	±0.03%F.S/C
Sensitivity Temperature	±0.03%F.S/C
Drift Long-term Stability	±0.2%F.S/year
Response Time	5ms (≤ 90%F.S)
Measurement Liquid	slightly corrosive liquid (water, edible oil, etc.)
Power Supply	11~30V DC
Overload Capacity	200%F.S
Compensation	-10 ~ +70 C
Temperature Medium	-40 ~ +80 C
Temperature	-40 ~ +85 C
Storage Temperature	304 stainless steel shell & 316L stainless steel core & special rubber-insulated
Material	
Device Weight	670g

## Probe Dimensions

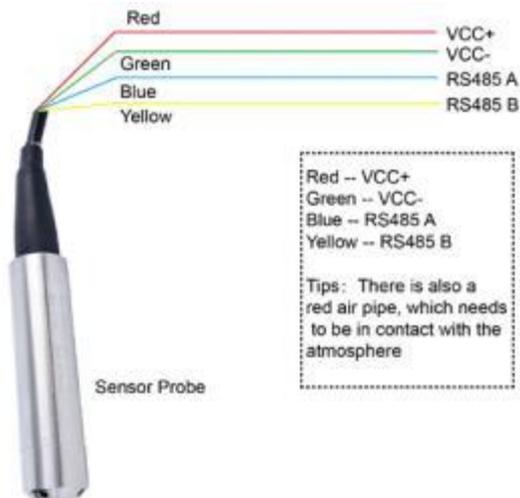


## Certifications



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## Wiring Diagram



## Aviation Connector Port Number (Wire Sequence)



Users can solder the aviation connector to the sensor by following the wire number/sequence below:

Plug pin	Sensor line order	Describe
1	12V	If the sensor is powered by 12v, connect this pin
2	5V	If the sensor is powered by 5v, connect this pin
3	RS485 A	-
4	RS485 B	-
5	GND	Ground

## Modbus-RTU Protocol

Default communication parameters: baud rate 9600bps, eight data bits, no check, one stop bit.

Slave address : 0x1A

Baud Rate supports: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200

The polynomial of CRC check is 0xA001

The data in the process of data communication is all processed according to the double-byte signed shaping data. If the data is identified as a floating point number, the write needs to read the decimal point to determine the size of the data.

Read the command format (03 function code) for example

Format of sending read command:							
Address	Fuction Code	Start register address(H)	Start register address(L)	The number of registers(H)	The number of registers(L)	CRC16(L)	CRC16(H)
0x1A	0x03	0x00	0x00	0x00	0x01	0x87	0xE1

Returns the format of read data:							
Address	Fuction Code	Data length	Value(H)	Value(L)	CRC16(L)	CRC16(H)	
0x1A	0x03	0x02	0x00	0x01	0x1D	0x86	

Write the command format (06 function code) for example

Format of sending read command:							
Address	Fuction Code	Start register address(H)	Start register address(L)	Value(H)	Value(L)	CRC16(L)	CRC16(H)
0x1A	0x06	0x00	0x00	0x00	0x02	0x0B	0xE0

Returns the format of data:							
Address	Fuction Code	Start register address(H)	Start register address(L)	Value(H)	Value(L)	CRC16(L)	CRC16(H)
0x1A	0x06	0x00	0x00	0x00	0x02	0x0B	0xE0

Abnormal reply return

Address	Fuction Code	Error code	CRC16(L)	CRC16(H)
0x1A	0x80+fuction code	0x01 (invalid instruction) 0x02 (invalid address)		

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### Protocol command list

Fuction Code	Start register address	The number of registers	Data byte	Data range	Description
0x03	0x0000	1	2	1~255	Read the slave address Default:0x1A (26 DEC)
0x03	0x0001	1	2	0 (1200) 1 (2400) 2 (4800) 3 (9600) 4 (19200) 5 (38400) 6 (57600) 7 (115200)	Read the Baud rate Default:3
0x03	0x0002	1	2	0 (not display) 1 (cm) 2 (mm) 3 (Mpa) 4 (Pa) 5 (kPa) 6 (MA)	Read the Unit
0x03	0x0003	1	2	0 (####) 1 (###.#) 2 (##.##) 3 (#.###)	The points represent decimal to 0 points 3 decimal
0x03	0x0004	1	2	-32768~32767	Measurement Value
0x03	0x0005	1	2	-32768~32767	Read the Zero Point
0x06	0x0000	-	2	1-255	Modify the slave address
0x06	0x0001	-	2	0 (1200) 1 (2400) 2 (4800) 3 (9600) 4 (19200) 5 (38400) 6 (57600) 7 (115200)	Modify the Baud rate

1. The modified value will take effect immediately. If it does not take effect, power off and restart.
2. Only address and baud rate can be changed.