

# AX01-QY1 Instructions

## Liquid Level Detection Module

### 1. Description:

The module operates by detecting changes in the capacitance of liquids to determine the liquid level height or the presence of liquid.

### 2. Product Features:

- \* Small size, low cost
- \* No mechanical movement, no wear and tear
- \* Non-contact, better sealing and safety
- \* Capable of detecting multiple types of liquids:  
water, alcohol, cooking oil, etc.

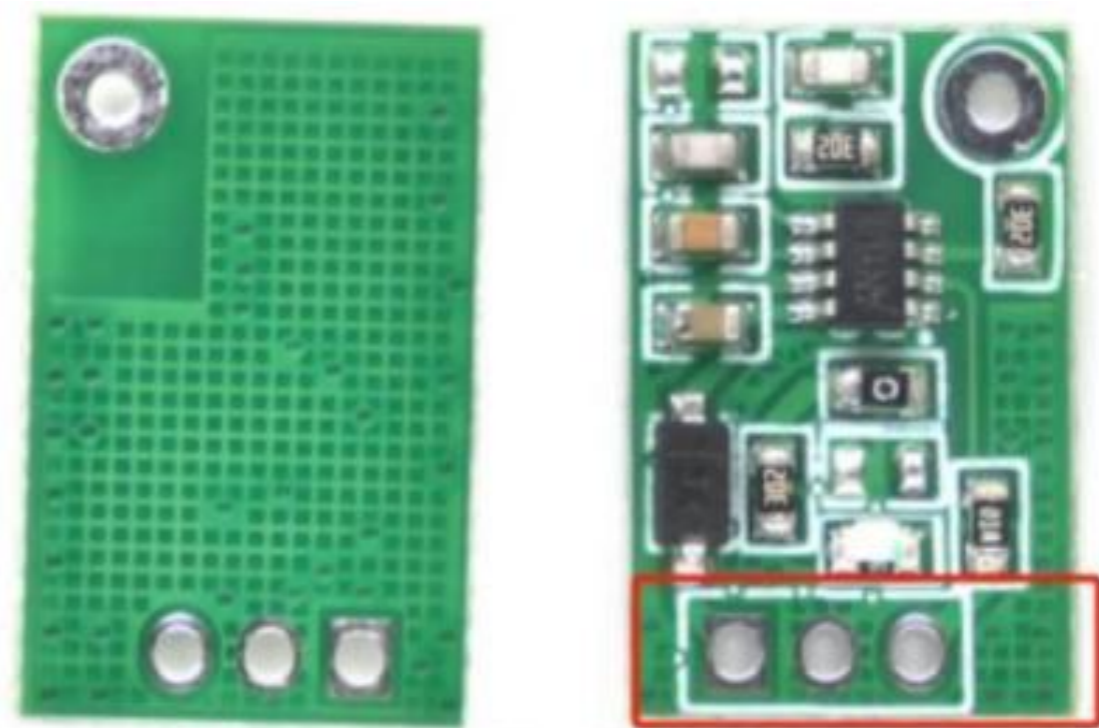
### 3. Module Specifications:

- 1) **Module PCB Size:** 10mm x 15mm
- 2) **External Power Supply and Water Level Signal Terminal Hole Spacing:** 2.0mm (can connect wires, pin headers, or other 2.0mm spacing terminals based on application needs)
- 3) **Port Definitions (refer to PCB markings):**
  - \* **0U:** Water level signal output (low level for water presence, high level for no water)
  - \* **-:** Connect to power supply negative
  - \* **+:** Connect to power supply positive; operating voltage range: 3.0V - 6.0V
- 4) **Usage Requirements:** This module has no defined sensing PAD; it can be chosen based on actual application needs, such as copper film, springs, etc.
- 5) **PCB Design:** Includes reverse polarity protection.

### 4. Application

- Intelligent floor scrubber, sweeping robot
- Water purifier, water dispenser, direct drinking machine
- Coffee machine, juicer
- Alcohol meter
- Chemical material containers or other liquid containers

### 5. Module Appearance Image



#### Interface Definitions:

VDD — Power Supply Positive  
VSS — Power Supply Negative  
OUT — Output Signal

## 6. Electrical Characteristics:

Electrical Parameters: TA=25°C

Characteristic	Symbol	Conditions	Min	Typical	Max	Unit
Operating Voltage	Vdd		2.5		6.0	V
Current Consumption	Idd	VDD = 5.0V		0.68		mA
		VDD = 3.0V		0.47		
Power-On Initialization Time	Tini			120		ms
Output Resistance (NMOS open-drain)	Zo	Low Level		510		Ohm
		High Level		10K		
Output Sink Current	Isk	VDD = 5V			10.0	mA
Response Time	rt			24		ms

## 7. Other Notes

\* The module's sensitivity, terminal arrangement, and structure can be adjusted based on customer application requirements. For any questions during use, please feel free to contact us for technical guidance.

\* This document is for reference only. Updates to new modules, such as PCB and components optimizations, may not necessarily be synchronized with this documentation.

## 8. Debugging

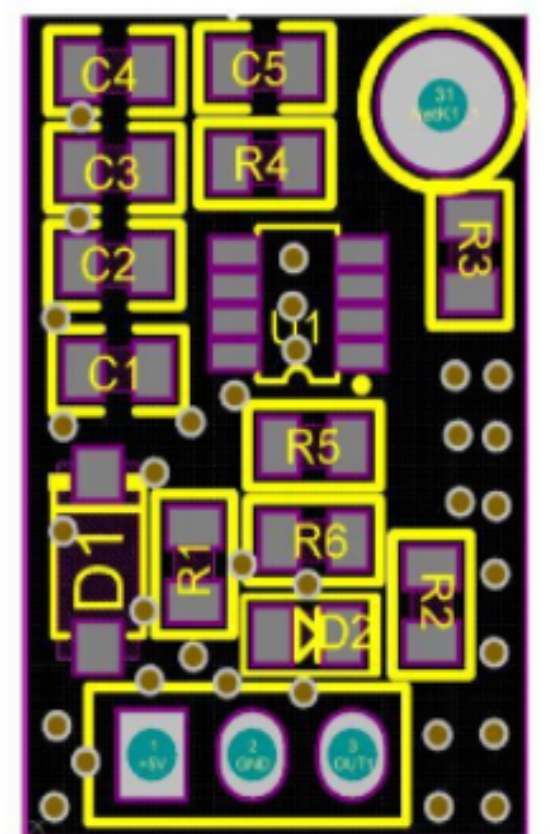
1. Capacitors C4 and C5 are parallel capacitors, corresponding to chip PIN3, CT2 is used to adjust the liquid level accuracy (0.5pf on the board or not assembled).

The recommended adjustment range is 0-15pF, the capacitor should be made of NP0 material, and generally a capacitor with an accuracy of  $\pm 0.1\text{pF}$  or higher should be selected.

2. Capacitor C3 corresponds to chip PIN5, CSN is used to adjust the water level detection sensitivity (15pf on the board), and the recommended adjustment range is 5-50pf.

3. The pins are arranged from left to right: VDD-VSS-OUT, where VDD is connected to 3-5V, OUT is low level when there is water, while high level when there is no water, the level can be reversed.

The upper right corner is the liquid level sensing PAD interface, which can be connected to a spring or a conductive film, such as a copper film, as a PAD.



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Professional Intelligent Sensing Solutions