Oview

The intelligent non-contact liquid level sensor (hereinafter referred to as the liquid level sensor) adopts advanced signal processing technology and high-tech integrated chip, which breaks through the influence of the container wall thickness and realizes the true non-contact of the liquid level in the closed container. Contact detection. The liquid level sensor (probe) is installed on the upper and lower sides of the outer wall of the container to be tested (the high and low levels of the liquid level). The non-metallic container does not need to be opened, and the installation is simple and does not affect production. It can detect the level of various toxic substances, strong acids, strong bases and various liquids in high-pressure airtight containers. The liquid level sensor has no special requirements for the material of the liquid medium and container, and can be widely used.

Product Features

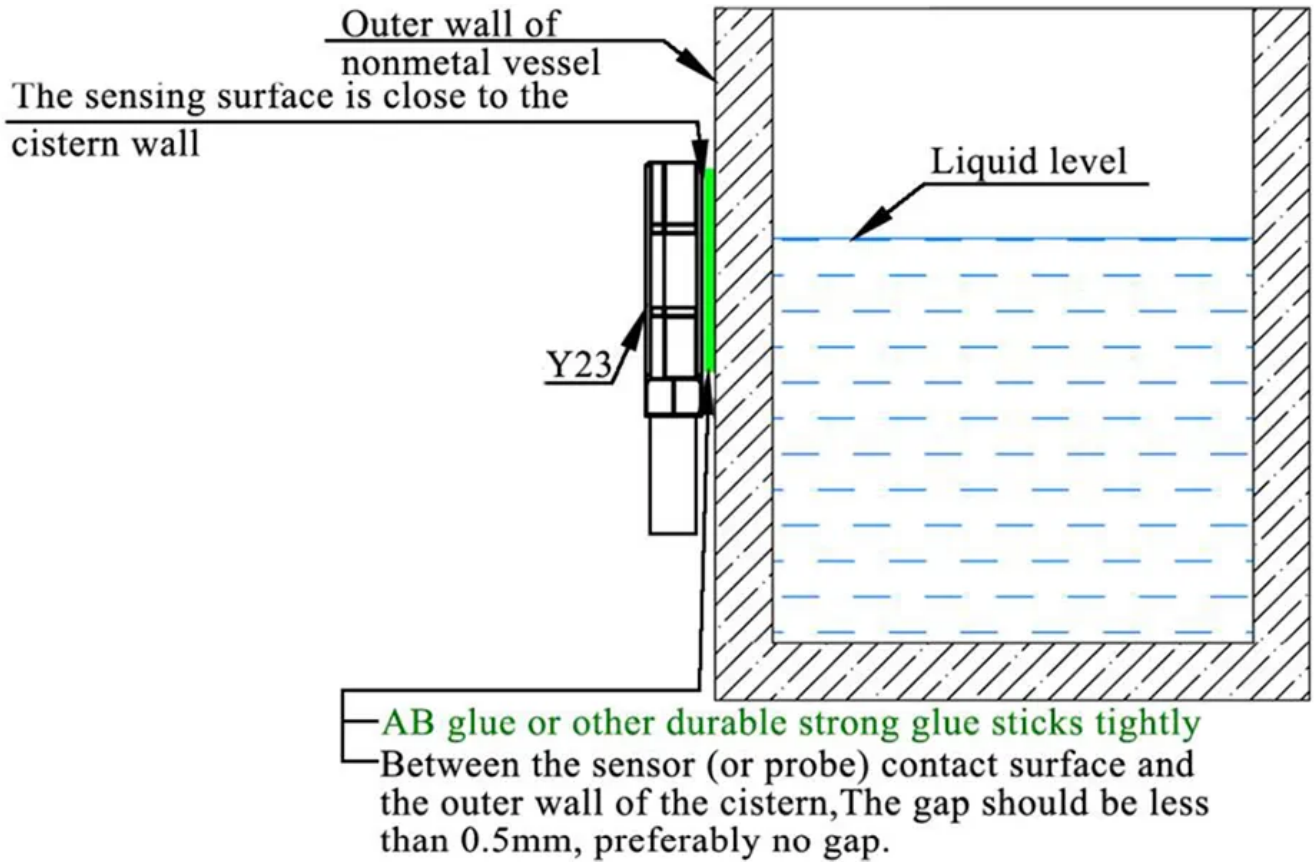
The non-contact liquid level sensor is suitable for the outer wall of non-metallic containers without direct contact with the liquid. It will not be corroded by strong acids and alkalis and other corrosive liquids, and will not be affected by scale or other debris. The detection is accurate and stable, and the boiling water level can be detected. Pure electronic circuit structure, non-mechanical working mode, stable performance and durability. High stability, high sensitivity, strong anti-interference ability, free from external electromagnetic interference, special treatment for power frequency interference and common mode interference, to be compatible with 5V power adapters on the market. Strong compatibility, penetrates various non-metallic containers, such as plastic, glass, ceramic and other containers, the sensing distance can reach 5mm; liquid, powder, and particulate matter can be detected. High and low level output mode, suitable for connecting various circuits and product applications.

Working principle

The intelligent non-contact liquid level sensor uses the sensing capacitance of water to detect the presence of liquid. When there is no liquid close to the sensor, the sensor has a certain static capacitance to the ground due to the distributed capacitance on the sensor. When the liquid level slowly rises and approaches the sensor, the parasitic capacitance of the liquid will be coupled to this static capacitance, making the final capacitance value of the sensor larger, and the changed capacitance signal is then input to the control IC for signal conversion, which will change The capacitance is converted into a change of a certain electrical signal, and then a certain algorithm is used to detect and judge the degree of this change. When the change exceeds a certain threshold, it is considered that the liquid level has reached the sensing point.

Parameter

Input voltage (Vin)	DC 5V
Ripple and noise voltage	<100mVp-p
electric current	5mA±2mA
Output voltage (high level)	5V
Output voltage (low level)	<0.4V
Output current	≤100mA
Response time	500mS
Working temperature	-20~85C
Induction thickness range	≤15mm
Liquid level accuracy	±3mm
Humidity	≤100%
Material	PC-V0 Fireproof material
Waterproof performance	IP65

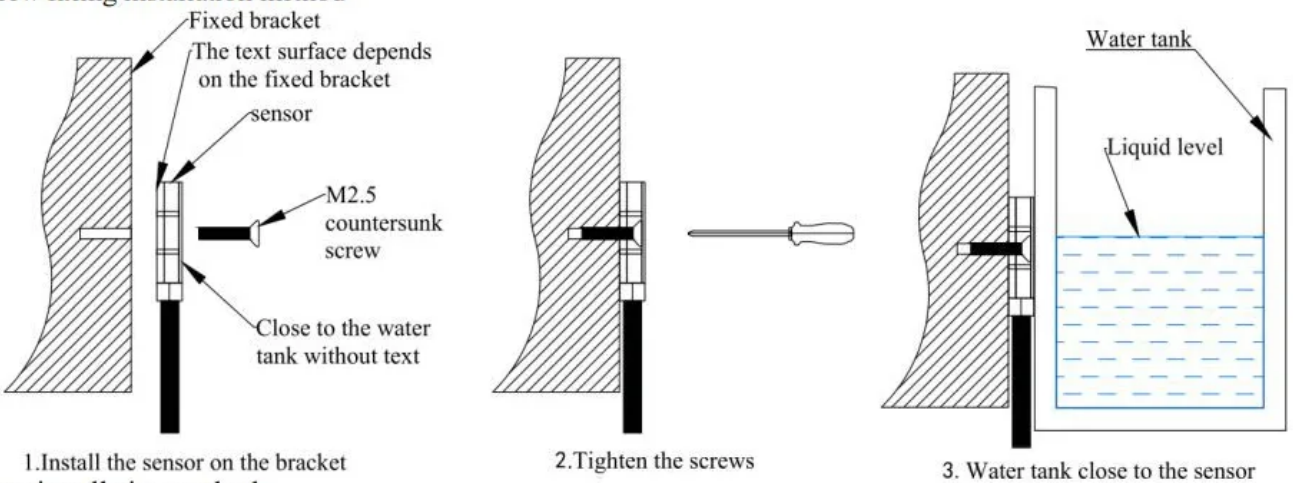


Clearance requirements

Requirements for the clearance between the contact surface of the sensor (or probe) and the outer wall of the container The contact surface of the sensor (or probe) and the outer wall of the container should be tightly pasted with AB or other solid-resistant glue. If there are special requirements, the gap should be less than 0.5mm, preferably no gap, otherwise it may affect the measurement accuracy

Installation method

1. Screw fixing installation method



1.Install the sensor on the bracket

2.Tighten the screws

3. Water tank close to the sensor

2. Paste installation method

The pasting installation method is as shown in the figure above, which can be directly pasted on the outer wall of the plastic container.

The adhesive material can be glass glue, 704 silicone, waterproof 3M double-sided tape, etc.

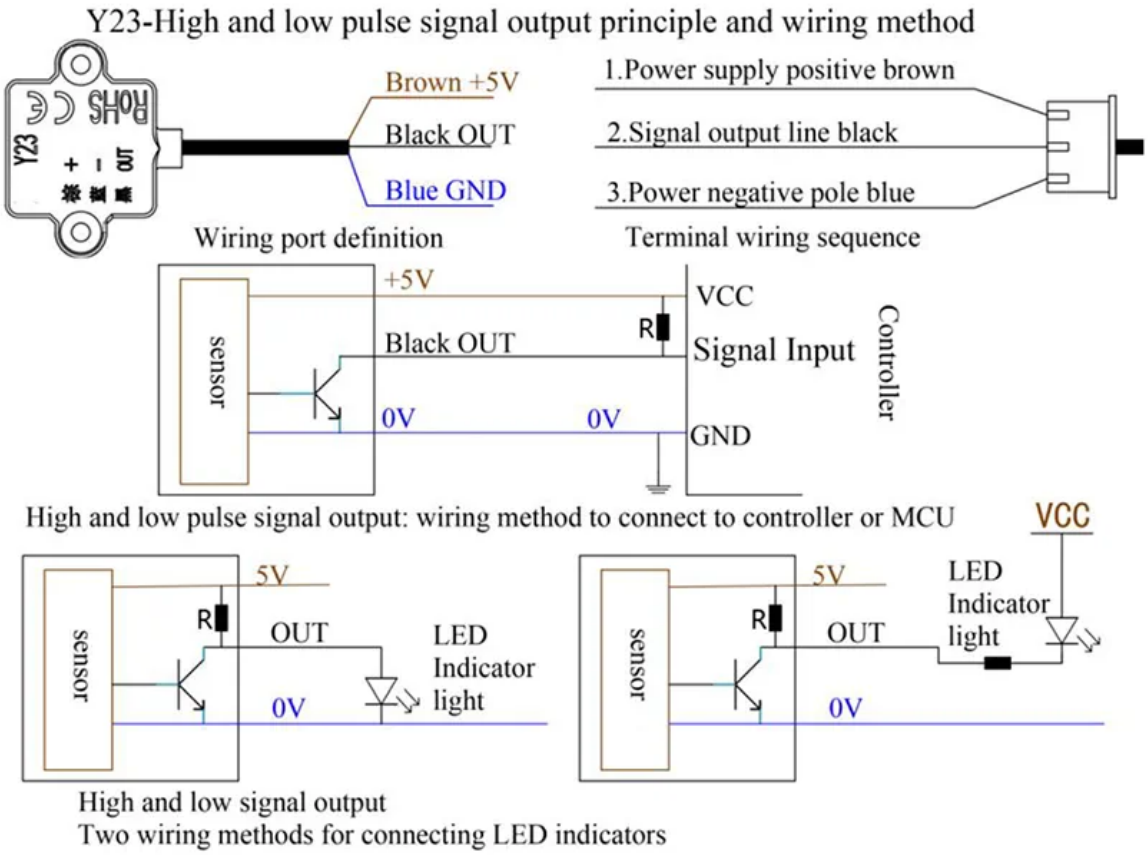
Precautions:

1. Do not use double-sided tape made of foam cotton.

2. The material of the container must be insulating material.

3. Try to use materials that are uniform and do not contain air interlayers, have no bubbles, do not absorb water, and do not easily change the dielectric constant as the container.

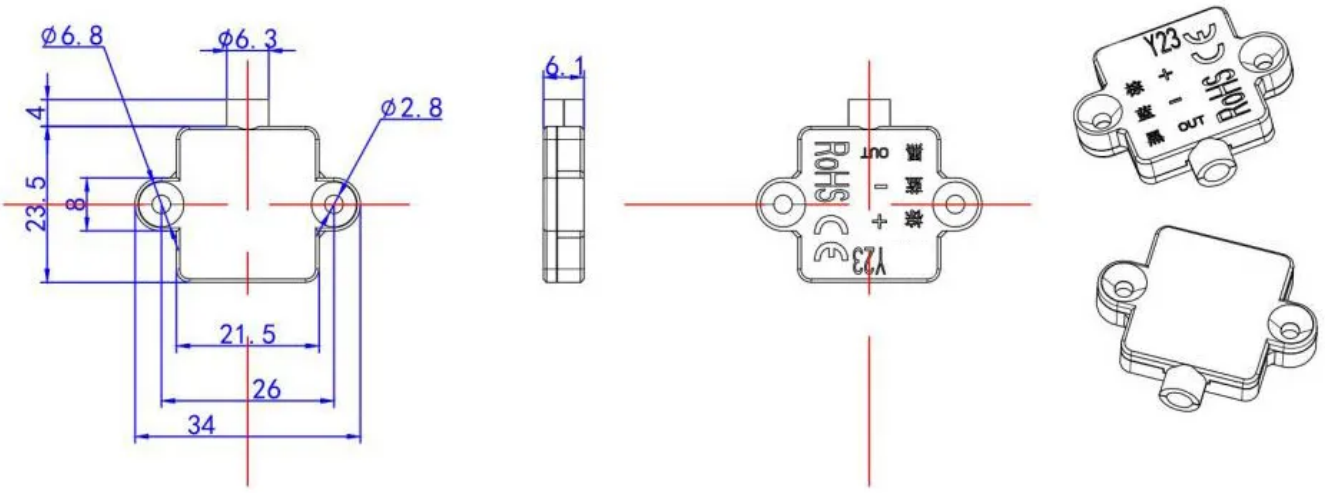
Output principle and recommended wiring method



Note

1. Input voltage requirements The input voltage of the non-contact liquid level sensor of this product is DC 5V, and the ripple and noise voltage requirements of the input voltage are less than 100mVp-p. The ripple and noise voltage is the sum of the peak-to-peak voltage of the fingerprint wave and the peak-to-peak value of the noise. When using this product, the user should first confirm the stability of the power supply voltage and the ripple and noise voltage is less than 100mVp-p. Unstable power supply voltage or excessive ripple and noise voltage may affect the unstable operation of the sensor.
2. Sensitivity The factory setting standard of Y23 non-contact liquid level sensor is: use the sensor to measure the water level of a 5mm thick acrylic sink at room temperature, the sensor is close to the outer wall of the sink, and the water level line just rises to the level and aligns with the center line of the two screw holes of the sensor Nearby ±3mm, the sensor signal line level jumps. Capacitive liquid level sensors have different sensitivity to the water level of containers of different materials and thicknesses. Users contact the manufacturer before bulk purchase, the manufacturer can set the factory sensitivity parameters according to the user's different use conditions.

Size



Other matters needing attention

1. The viscosity of the measured liquid medium When the dynamic viscosity is less than 10mPaS, it is measured normally. 10mPaS<dynamic viscosity<30mPaS may affect the detection. When the dynamic viscosity is greater than 30mPaS, it cannot be measured because a large amount of liquid adheres to the container wall.
2. Note: As the temperature increases, the viscosity decreases, and most high-viscosity liquids are more affected by temperature. Therefore, pay attention to the influence of liquid temperature when measuring viscous liquids.
3. Pay attention to keeping the level gauge clean, try to prevent corrosion and avoid violent collisions and blows from other objects.
4. During outdoor installation, avoid direct sunlight and rainwater directly flowing to the main body of the level gauge, 9 / 10 and keep away from high heat sources and pay attention to ventilation. If the ambient temperature exceeds the rated temperature, corresponding cooling protection measures should be taken.
5. When the ambient temperature is lower than the normal operating temperature range of the level gauge, an instrument protection box or other protective rain cap devices can be used for antifreeze protection, and pay attention to keeping the level gauge dry. The sensor should be regularly maintained and inspected. (The detection time interval is determined by the use unit according to the specific situation)

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