Water leak detection

Water immersion sensor instruction manual

XKC-Y28B-NO

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1st. Overview

The water immersion sensor is a simple-to-operate liquid leakage monitoring device that can detect the moment of water leakage and issue an alarm in time. Water immersion sensor can effectively replace manual inspection, monitor water leakage in all areas with water sources such as rainwater leakage, water pipes, etc., and can conduct real-time monitoring and early warning of hidden water leakage.

Water immersion sensors are mainly used in places with water requirements, such as computer rooms, power distribution rooms, data center rooms, communication rooms, power stations, intelligent buildings, warehouses, garages, factories, archives and other places.

2nd.Product Features

1 Pure electronic circuit structure, non-mechanical working mode, stable performance and durable life.

2. High stability, high sensitivity, strong anti-interference ability, no external electromagnetic interference, special treatment for power frequency interference and common mode interference, so as to be compatible with all 5V, 12V, 24V power adapters on the market.

3. The voltage can be selected (5V, 12V, 24V), suitable for connecting various circuits and product applications.

4 Simple installation, two screws can be fixed.

3rd. working principle

The intelligent non-contact liquid level sensor uses the inductive capacitance of water to detect whether there is 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 capacitance value of the sensor larger, and the changed capacitance signal is then input to the control IC for signal conversion. 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.。

4th.Product parameter

Project name	**Parameters**		
Product model	XKC-Y28B-NO		
Supply voltage（Vin)	5V、12V、24V		
Output mode	Normally closed	Normally open	Communication output
electric current	13mA		
The output current	DC24V/2A		
Response time	500mS		
Working temperature	-20~105℃		
	Outer diameter of pipe D(mm)	**Sense container wall or tube wall thickness L(mm)**	

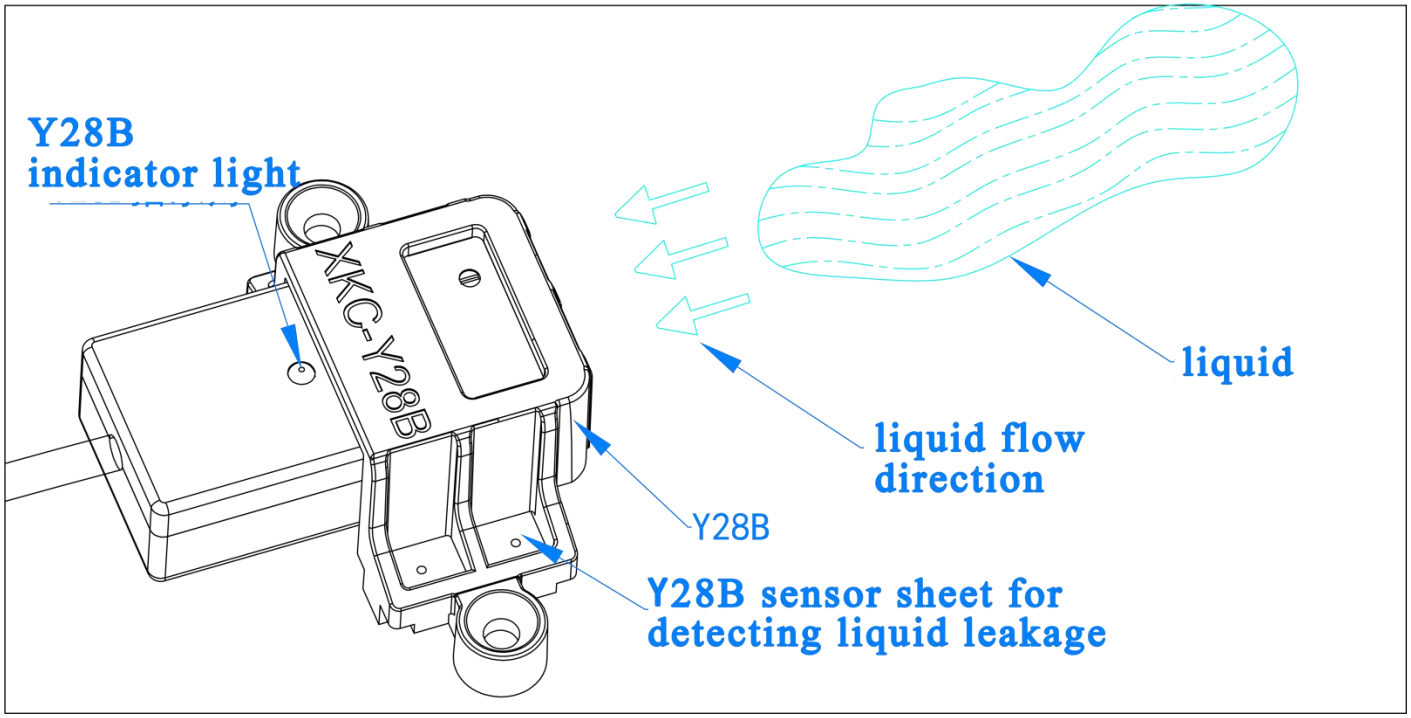
Sensor sensitivity	D≥100	20 ± 3
	100>D≥80	15 ± 2
	80>D≥60	12 ± 1.5
	60>D≥40	7 ± 1.0
	40>D≥30	5 ± 1.0
	30>D≥20	3 ± 1.0
	20>D≥10	1.5 ± 0.5
Applicable pipe diameter range	≥11mm	
Liquid level accuracy	±1.5mm	
humidity	5%~100%	
Line length	500MM（±10MM）(Bulk can be customized)	
Terminal sequence	Brown (power supply positive), yellow (signal output) Blue (power negative), black (COM terminal)	
Material	PC-V0 fireproof material	
Waterproof performance	IP67	
Safety standard certification	CE	
Environmental protection certification	ROHS2.0	

5th.product selection

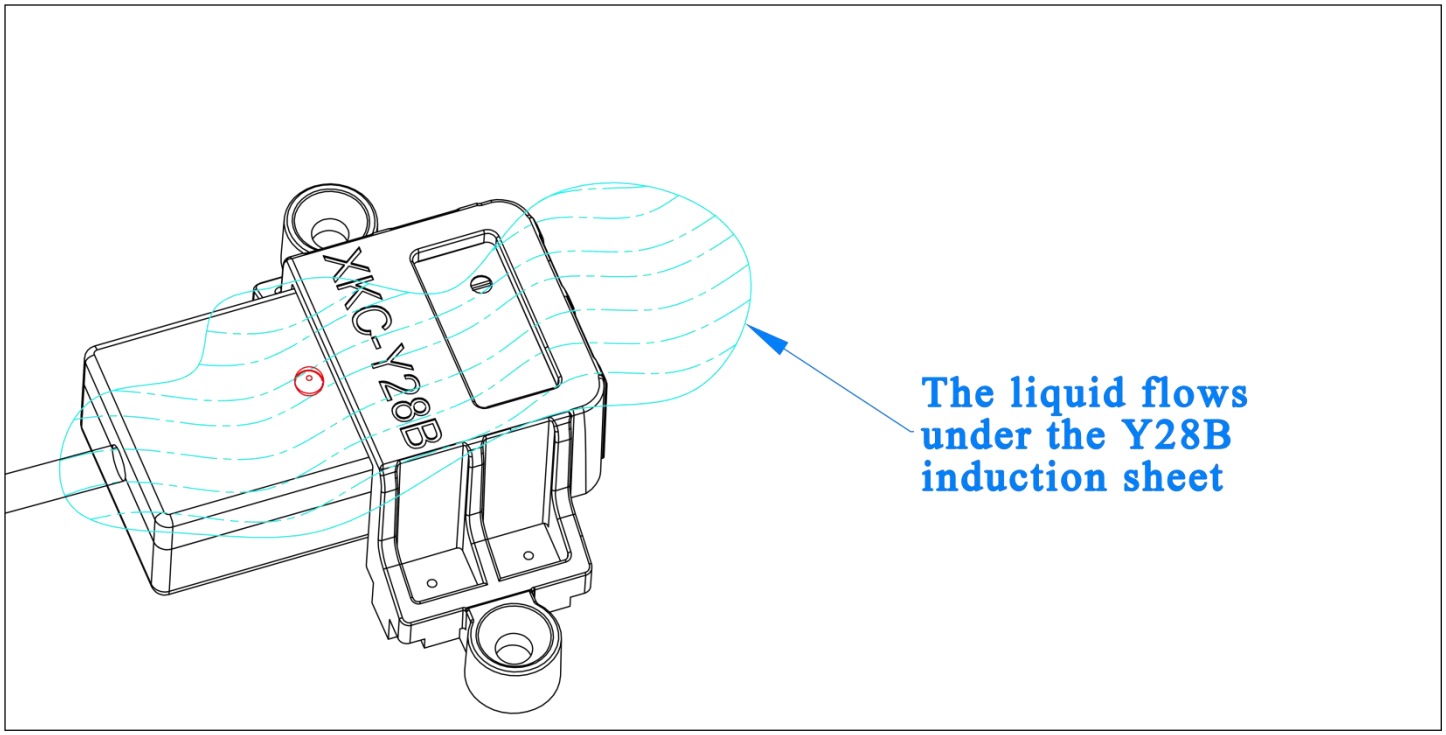
Normally open output interface ———————— Model: XKC-Y28-NO (DC 5V),
Normally open output interface ———————— Model: XKC-Y28-NO (DC 12V),
Normally open output interface ———————— Model: XKC-Y28-NO9(DC 24V)

6th. Function Description

1. As shown in the figure below, the liquid flows to Y28B.



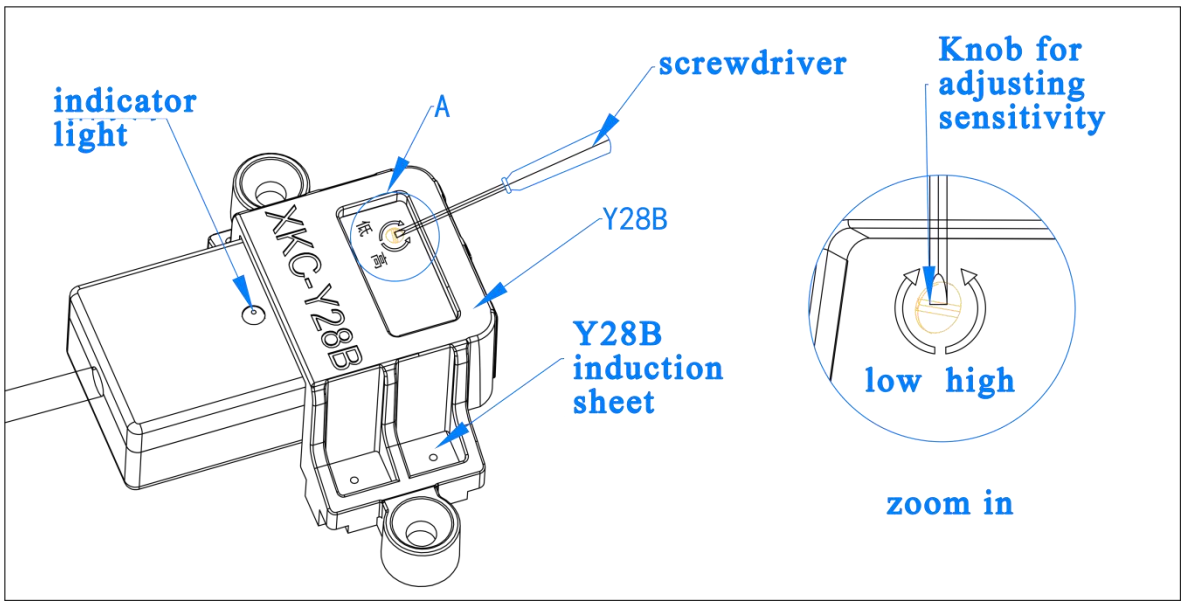
2. As shown in the figure below, when the liquid flows under the Y28B induction sheet, the induction sheet senses the flowing liquid, and the indicator light turns on, indicating that there is liquid leakage and needs to be dealt with.



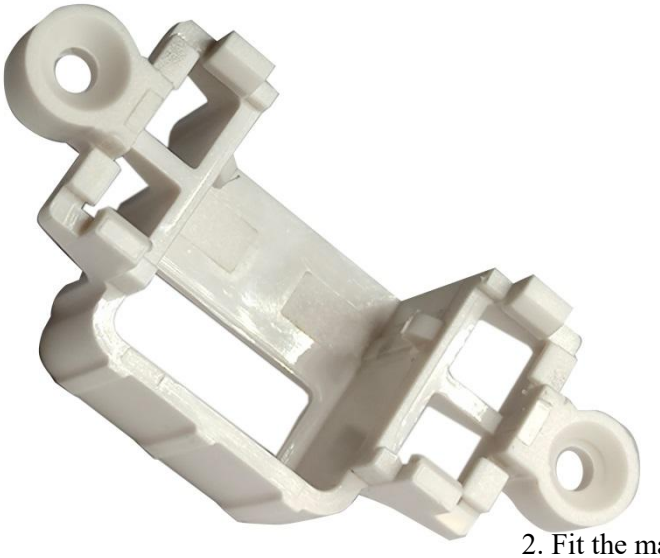
7th. Sensitivity adjustment

If the non-contact liquid level sensor cannot detect or the detected liquid level deviates from the Y28 sensor, The sensitivity knob can be adjusted with a small screwdriver. Setting method:

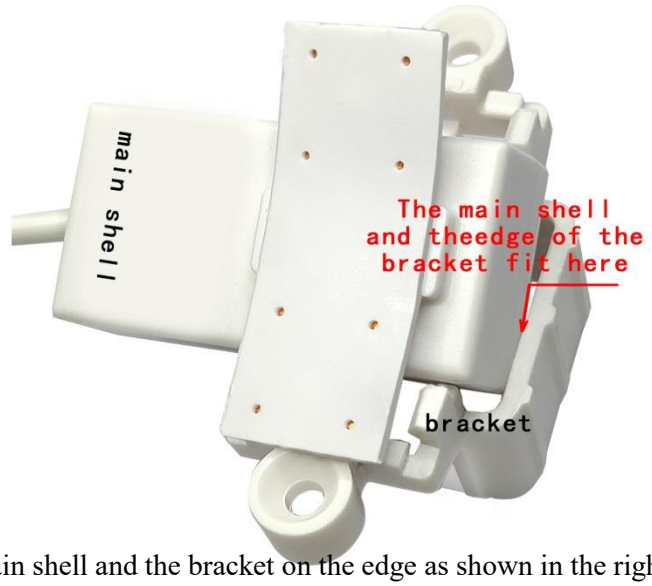
1. Turn counterclockwise to increase sensitivity.
2. Turn clockwise to lower the sensitivity..



8th. Y28B assembly method



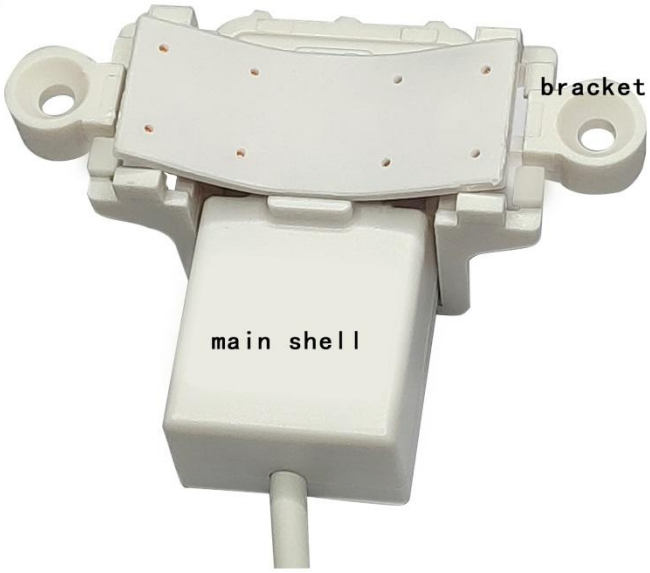
1. The back of the bracket is as shown on the left



2. Fit the main shell and the bracket on the edge as shown in the right picture above, and then press the main shell down firmly. After it is in place, press the 4 corners of the induction sheet into the corresponding buckles, and it is assembled. .

9th. Y28B disassembly method

1. As shown in the picture above, use a screwdriver to pry the left and right sensing plates to make them free from the buckle



2. When the sensor plate is released from the buckle as shown in the picture above on the right, grasp the main shell with one hand and the bracket with one hand and break it with force, then it will be disassembled.

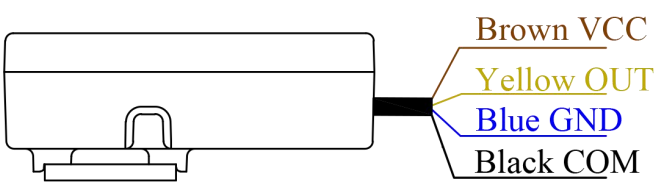
10th. installation method

Put the M4 screw of the type shown in the figure below in the screw hole of the Y28B, and screw the Y28B on the corresponding plane to fix the Y28B in the position where the liquid leakage needs to be detected.

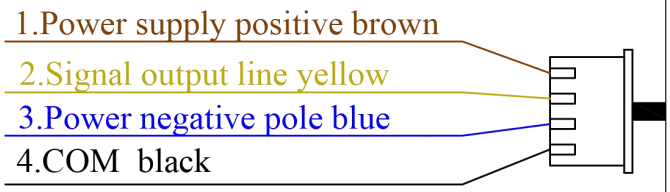
Note: The position where Y28B is installed must be flat, otherwise the detection effect will be affected.

11th.Y28 wiring diagram of various models（head only）

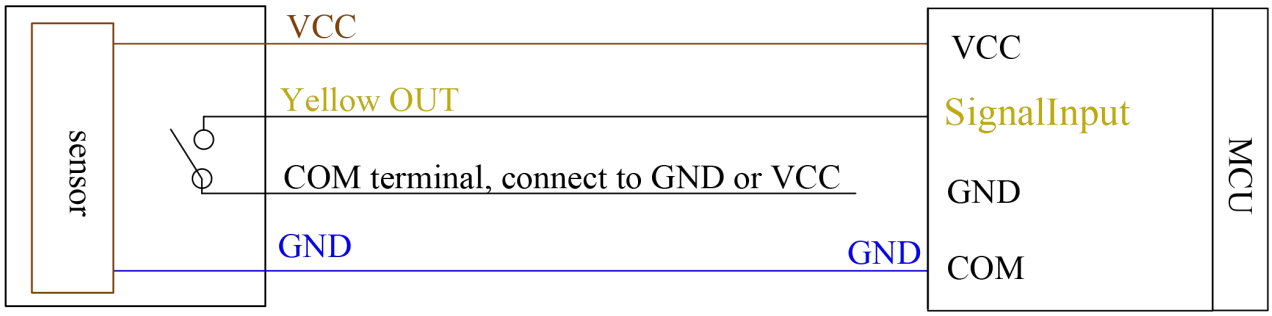
XKC-Y28B-NO output principle and wiring method



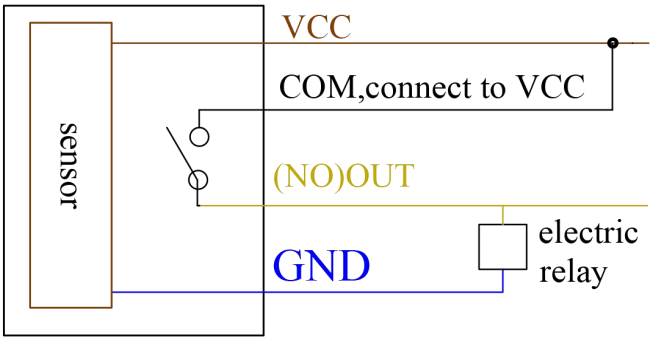
Wiring port definition



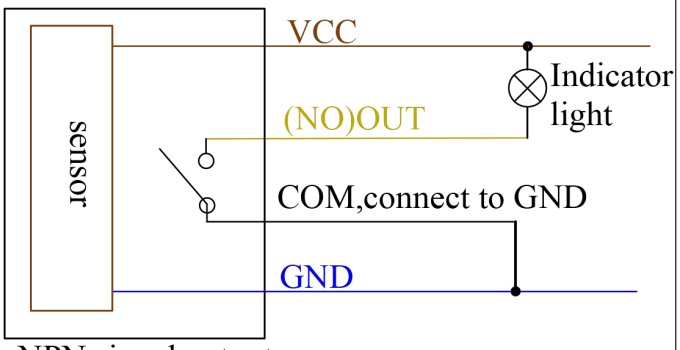
Terminal wiring sequence



Wiring method for connecting PLC or MCU:
NPN input type: COM terminal connected to GND
PNP input type: COM terminal connected to VCC



PNP signal output:
Wiring method of connecting relay



NPN signal output:
Wiring method of connecting indicator light

Product Applications of relay NO point output:

1. When the black wire is connected to VCC:

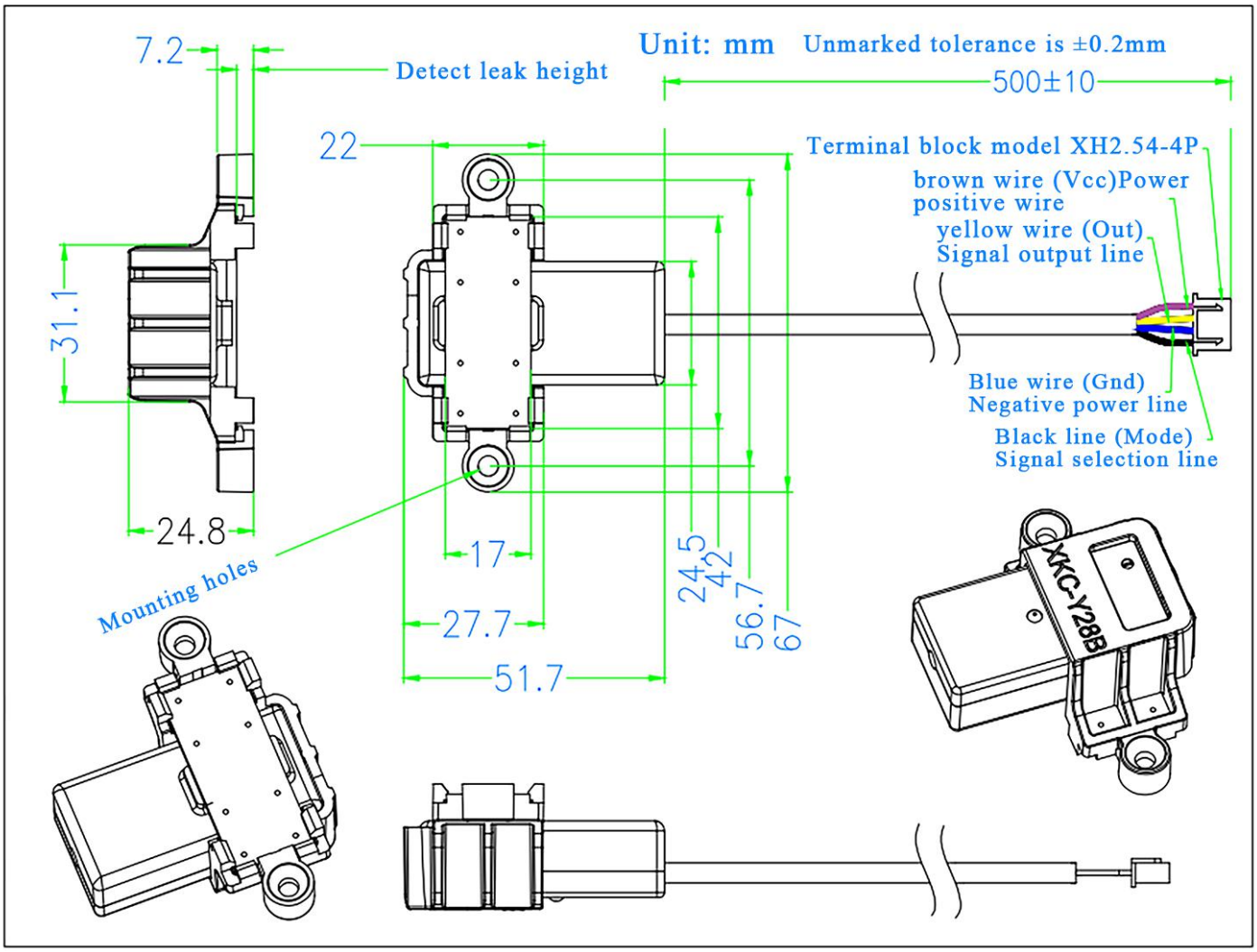
When the liquid is sensed, the relay is closed, the NO point of the relay is turned on, and the VCC voltage is output;

When no liquid is sensed, the relay is disconnected, and the relay NO point is disconnected;

2. When the black wire is connected to GND.

When liquid is sensed, the relay is closed, the NO point of the relay is turned on, and the GND voltage is output;
When no liquid is sensed, the relay is disconnected, and the relay NO point is isconnected.

12th. Product size and physical map



Terminal model: XH2.54-4P

13th.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 sensor 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 sensor, 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 sensor, an instrument protection box or other protective rain cap devices can be used for antifreeze protection, and pay attention to keeping the sensor dry. The sensor should be regularly maintained and inspected. (The detection time interval is determined by the use unit according to the specific situation).

14th.Troubleshooting:

Fault status	Analyze the reasons	Problem solving measures
After the liquid level sensor is energized, there is no response (the indicator light does not light when the water level reaches the sensing point, and the sensitivity adjustment has no response)	①The power cord is not connected	Check and connect the power
	② The positive and negative ends of the power cord are reversed	Correct wiring
	③The power module is damaged	Replace the circuit board where the power module is located
	④Sensitivity is too low	Adjust the sensitivity to the appropriate gear
The indicator light keeps on	①Sensitivity grade is too high	Adjust the sensitivity to the appropriate grade
	②The initialization parameters are abnormally modified	Return to the factory to reinitialize
	③The sensor has debris or other metal parts close to it	Clean up debris and keep a certain distance from metal parts

15th.Product warranty terms and instructions

(A) .Warranty service

1. Warranty period maintenance: from the date of purchase, the product host has a one-year free warranty. The company has the right to decide to repair or replace the faulty part. If it is replaced, the replacement part may be a new device or a repair product of the same category, function, and quality. The replaced faulty part belongs to the company; the product Resale and repair do not affect the warranty period. Products that have been repaired or replaced continue to enjoy the original remaining warranty period service. If the warranty period is less than three months after the repair, the repaired or replaced part shall be shipped from the date of delivery Warranty for three months; all products of the company are guaranteed for repair.

2. Loss upon arrival (DOA) replacement: From the day of purchase, you can enjoy a free replacement service within 7 days. Products with the following problems are defined as DOA equipment: the packing and packing list do not match after the first unpacking of the product; some or all of the components cannot be used normally after the first unpacking of the product (surface scratches or other things that do not affect the function of the device) Defects are not included); other hardware failures identified by our company's engineers remotely or locally.

(B). Applicable limitations of warranty

For the following situations, the company does not assume warranty responsibility:

1. The product is out of warranty; the surface of the product is fragile and damaged; the appearance of the product is seriously damaged, installation/use in abnormal environment, unauthorized disassembly and repair/modification, external power supply damage and other abnormal damage;

2. Damage caused by incorrect installation and use of the product by the user not following the requirements of the manual;

3. Damage caused by natural disasters and human negligence (fire, lightning, flooding, impact, etc.).

(C) .Accessories and consumables are not covered by the warranty.

(D) .Non-free warranty service

Within two years of product purchase, for non-warranty product (including components) failures and damages, you can choose paid maintenance services (free labor costs), and we will charge the transportation cost of repairing parts and accessories according to the actual situation.

(E). Ways to obtain warranty service

It is recommended that you contact the dealer who purchased this product to obtain the warranty service. For the warranty, please present a valid warranty card (the dealer's stamp is required to take effect) or the purchase invoice/receipt: if you can't show it, the product's free warranty period 12 months from the product shipment date, and the latest DOA application deadline is 7 days from the product shipment date.

(F). Statement

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(G).Environmental protection This product meets the design requirements for environmental protection.The storage, use and disposal should comply with relevant national laws and regulations.Seek to proceed.

16th. Manual version

Version	Release date
V16	September 28, 2020