

## Instructions

### Digital capacitance level switch manual



attestation

Please read this instruction manual carefully before installation

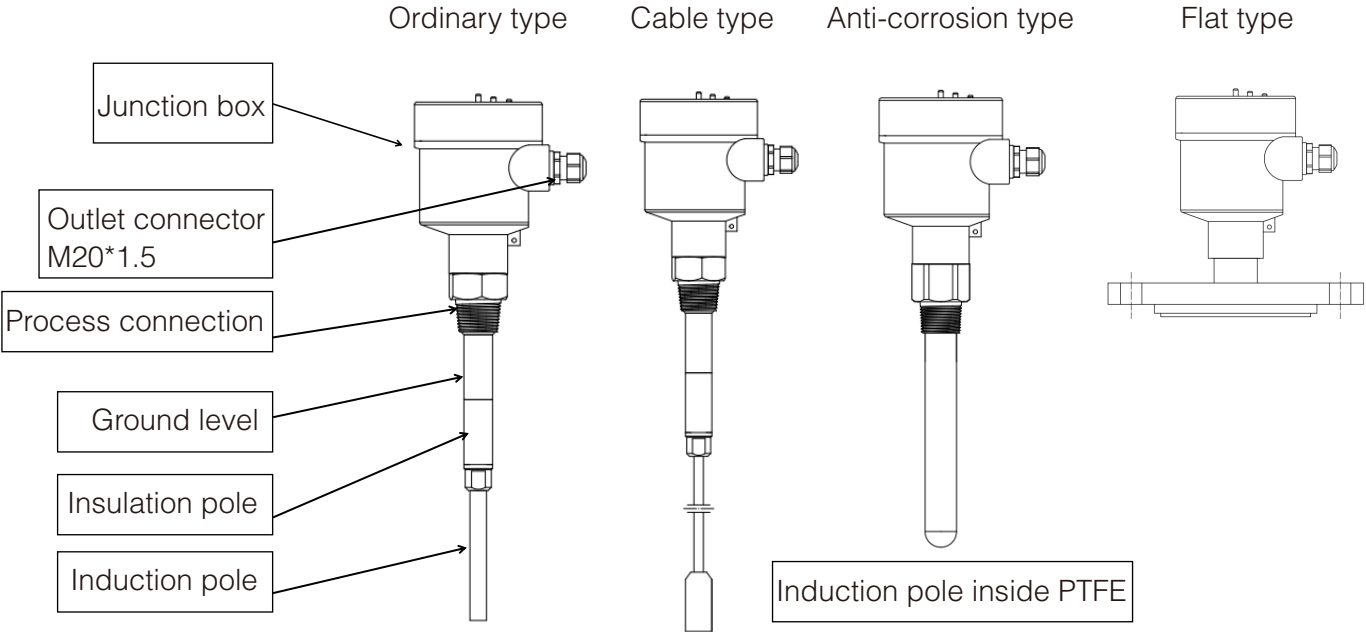


# Product overview

Our capacitance products have been comprehensively upgraded on the basis of the first generation products, enhancing the anti-interference performance of the circuit and increasing the built-in box of the circuit board, which in turn enhances the stability of the product and the protection of the circuit board, and meets the measurement of more and more complex working conditions.

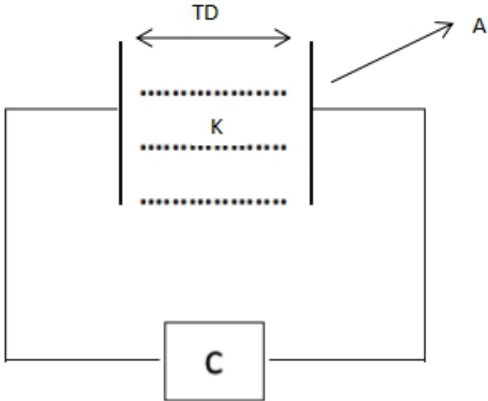
This product is suitable for most of the solid/liquid measurement (including viscous materials), just one key calibration can be set to the appropriate alarm point, with LCD display can be real-time detection of the measured value, through the key can be set to calibration 1 output value, calibration 2 output value, delay value, hysteresis value, filter value, switching between high and low alarms, more advanced, more intelligent and more humanized interface greatly broadens the scope of the use of the product and the use of experience. experience.

# Appearance/Structure



# Principle of operation

Digital capacitive material/liquid level switch is based on the formation of capacitance between the sensing electrode and the ground electrode, with the measured material as the medium, when the material covers the sensing electrode, the measured capacitance value will increase, and the switch signal will be output when it reaches the set value.



$$C = ( 0.0884 \times K - A ) / TD$$

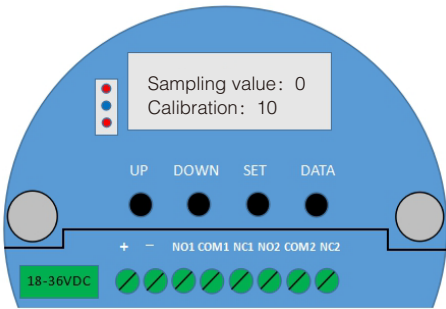
K = dielectric constant  
 A = contact area  
 TD = thickness of insulation

# Technical Parameters

Power supply	18 ~ 36VDC /85 ~ 250VAC
Output	3A/250VAC SPDT*2 groups (can be set independently)
Temperature	-20---80°C /200°C/500°C
Pressure	25 bar (customizable)
Connection material	SUS304+PTFE (can be customized)
Junction box material	aluminum alloy baking paint
Process connection	3/4 "PT, 1 "PT (can be customized)
Electrical connection	M20*1.5*2

# Panel, wiring, installation and operation instructions

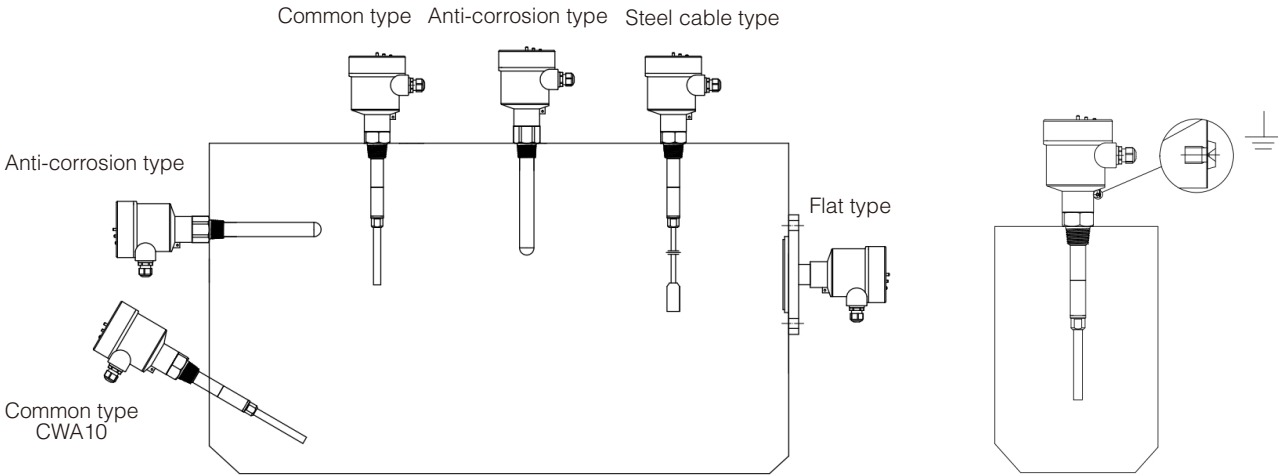
## 1. Panel and wiring introduction



- Red light (top) ----- Alarm point 2 output indicator
- Blue light (center) ----- power output indicator light
- Red light (down) ----- alarm point 1 output indicator
- UP----- upward shift/upward value/alarm 1 One-touch calibration
- DAWN----- shift up/adjust value up/alarm 2 One-touch calibration
- STE----- return
- DATA----- enter debug menu
- +/------ power supply terminal (18-36VDC/85-260VAC)
- NO1/2----- relay normally open terminal block
- COM1/2----- relay common terminal block
- NC1/2----- relay normally closed terminal block

## 2. Installation Requirements

Installation precautions:

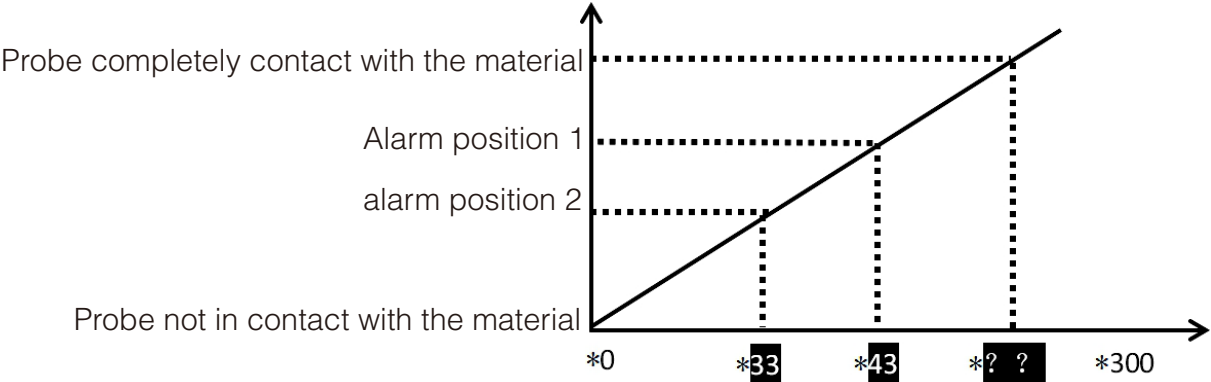


Warning: In the process of installation, a multimeter can be used to measure whether the product grounding screws and the tank are conductive, if they are conductive to the tank, there is no need to connect them with wires, if not, please connect them with wires to ensure the accuracy of the measurement!

- 1. When installing the product, make sure that the insulated end of the product is inserted at least 30mm into the tank;
- 2. General type series should pay attention to the insertion depth when installing on the side wall, and should explain the installation method to our company when the selection exceeds 500mm;
- 3. The maximum length of threaded corrosion-resistant series is 150mm (excluding teeth), and the flange corrosion-resistant type should be used for the length exceeding this length, and the pressure-resistant level is within 1bar;
- 4. The cable type can only be top mounted;
- 5. Flat plate type should pay attention to the size of the opening, to ensure that the induction pole can not touch the pipe wall;
- 6. For stable measurement, if the customer's tank is made of metal, the product should be connected to the tank with external grounding screws to eliminate interference.

### 3.debugging instructions

The relationship between the probe contact material and the sampling value:  
Probe in the non-contact material sampling value of 0, when the probe close to the material to the probe completely contact with the material, the value will always be larger, to reach a certain value to remain unchanged, the size of this value and the dielectric constant of the material to be measured, the larger the dielectric constant the larger the value.



\*When the probe is not in contact with the material: If the sampling value is not 0, you can calibrate the zero position by pressing the key, and long press the UP and DOWN keys at the same time for 10S. Press and hold the UP and DOWN keys for 10S to automatically calibrate the zero position (the factory setting may deviate from the actual installation conditions).

\*Alarm position 1/2: two values can be set at a certain position where the probe needs to contact the material, the two values are not differentiated. The two values are independent SPDT signals. Press and hold UP key for 5S to set the current sampling value corresponding to calibration 1 (as shown in Fig. 1); Press and hold the DOWN key for 5S to set the current sampling value corresponding to calibration 2 (as shown in Fig. 2).

\*The probe is in full contact with the material: the corresponding sampling value varies according to different working conditions, different materials and different products.

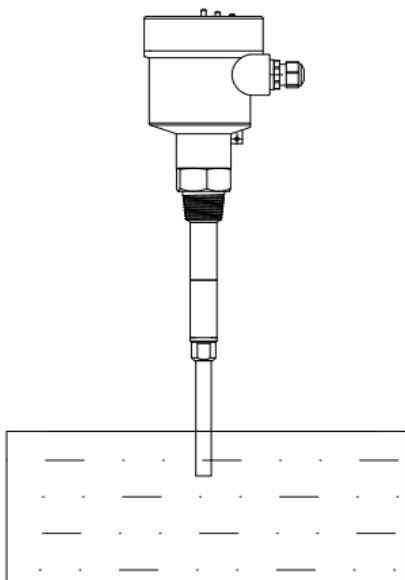


Fig. 1

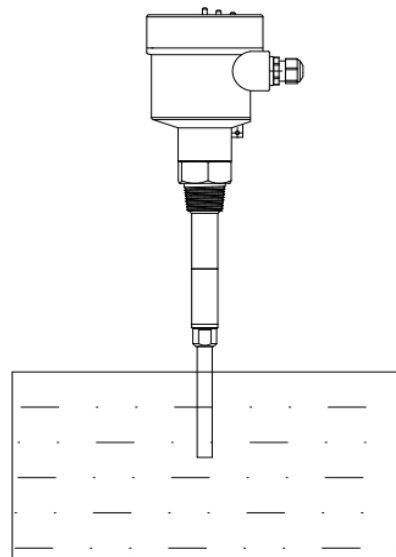


Fig. 2

Note: the product sampling value for the internal analog value, the smaller the dielectric constant of the measured object the greater the measured value (the product is placed in the air when the value is the largest, the maximum value of a single product there will be a difference, which is a normal phenomenon); The larger the product calibration value, the more sensitive, and vice versa, the weaker; According to the actual need to set the calibration value, you can effectively shield the viscous object product error signal, can also be used for two kinds of dielectric constant of the object's sub-interface measurement; The product can also set the delay time to shield the instantaneous interference.

LCD key operation instructions:

