

LK50 Tuning Fork/Liquid Level Switch



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1. Overview

Tuning fork type level limit switch is a universal level limit switch. The tuning fork is excited by the piezoelectric crystal to produce vibration. When the tuning fork is immersed in liquid or solid, the vibration frequency changes. This frequency change is detected by the electronic circuit and a switch is output. Tuning fork type level limit switch is not affected by dielectric constant, turbulence, agitation, bubbles, vibration and other factors, and has no moving parts, so it does not require maintenance and adjustment. It is an ideal choice for level switches under complex working conditions.



2.Product features

1. Strong adaptability: The different dielectric constants and densities of the tested materials have no effect on the

measurement. Scaling, agitation, turbulence, bubbles, vibration, medium viscosity, high temperature, high pressure and other harsh conditions have no effect on the detection.

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3. Technical parameters

Power supply voltage: DC 24V or universal power supply Working temperature: Fork body -40~150°C,instrument -30~70C, rod body - 40~150°C, instrument -30~70°C

Insertion depth L: can be customized Working pressure: less than 2 MPa Medium density: minimum 0.7g/cm³

Output mode:

- 1. Standard tuning fork: DPDT re
- 2.Exquisite tuning fork: SPST relay output (AC220V/3A, DC 30V/3A) <u>G 1/2"</u> (可定制) PNP/NPN, (24VDC, 0. 5A)
- 3.Rod tuning fork: DPDT relay output AC220V/5A, DC3 adjustable power







Consumption: 1W Installation specifications: R1" thread (customizable) Electrical interface: M20X1.5 (standard tuningfork/stick tuning fork); Pg9 (compact type)

4.Common product forms



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5.Electrical connection



Panel description:

- Open the Hirschmann junction box and refer to the position shown in the figure.
- The delay setting is used to delay the action of the relay one by one. There are (0-9 gears), and each increment of 1 gear adds about 3 seconds of delay. The factory setting is 0 gear without delay.
- Press the button to calibrate one by one at the same temperature as the medium. When the medium is not in contact with the fork of the tuning fork switch, press the button to calibrate the empty tank. The product has been calibrated before leaving the factory at room temperature (-20~80°C).
- Normally open and normally closed switch one by one, as shown in the figure, the pull switch is normally open on the left, and the pull switch is normally closed on the right.



Stick tuning fork



Panel description:

 Connect the power supply and pay attention to whether the power supply voltage is correct; Use 220VAC, L (live wire), N (zero wire), G (ground wire, please keep the ground well); use 24VDC, + (positive),-(negative);

- Sensitivity is a sensitivity adjuster, where C is coarse adjustment, F is fine adjustment, clockwise sensitivity becomes higher, and counterclockwise sensitivity becomes lower:
- •11 High output, L low output, the relay switch status is opposite; Probe Status is the status indicator, green represents the power is on, and red represents the status switch;
- Delay: Delay adjustment, 0.2-50 seconds adjustable, used to adjust the delay time of the relay switch output, the factory default is off delay (rotate counterclockwise to the end);
- First rotate F to the middle position, then adjust the C position clockwise or counterclockwise, and slowly rotate to the critical point (first rotate clockwise to the red light and then counterclockwise to the green light, repeat 1-2 times, and finally freeze at the green light position. This position is called the critical point);
- Adjust C and F according to different media to the required state.



Standard tuning fork



Panel description:

- Wiring terminals: Terminals "1" and "2" are connected to power terminals; terminals "3" and "4" are NC; terminals "4" and "5" are NO; terminals "6" and "7" are NC; terminals "7" and "8" are N0.
- The delay setting is used to delay the action of the relay one by one. There are (0-9 gears), and each increment of 1 gear adds about 3 seconds of delay. The factory setting is 0 gear without delay.
- Sensitivity adjustments are available one by one (0-9 gears), and the factory set to 0 gears, the sensitivity is the largest. If you need to adjust, please make it under the manufacturer's guidance.
- Indicator light: The power indicator light is on when the power of the meter is turned on, and the output indicator light is on when the output relay is energized.
- Press the button to calibrate one by one at the same temperature as the medium. When the medium has not been in contact with the fork of the tuning fork switch, press the button to calibrate the empty tank.

The product has been calibrated before leaving the factory at room temperature (- 20~80°C).



Installation icon:



Hold correctly

Cannot change the shape of the fork





Standard tuning fork



figure 3 PNP OUTPUT

figure 4 SPST OUTPUT

6.Installation method:

- 1. Ensure that there is enough space for installation and electrical connection.
- 2. Avoid installing the equipment in a location where it can easily touch the liquid that enters the storage tank at the filling point of the tank.
- 3. Avoid spilling large amounts of liquid on the tuning fork.
- 4. Make sure that the tuning fork does not come into contact with the tank wall, any internal fittings or interfering objects.
- 5. Ensure that there is sufficient distance between the buildup on the tank wall and the tuning fork.
- 6. When disassembling and assembling the instrument, it is forbidden to hold the shell by hand and twist it, and use a wrench to turn the hexagonal bolt.
- 7. Rainproof measures should be taken after the instrument is installed on site, and no liquid is allowed to penetrate into the junction box. When side-mounted, the electrical interface should face downwards.
- 8. Check if there is a risk of product accumulation in the tuning fork. Avoid excessive accumulation of dried and coated products. Ensure that the tuning fork has no risk of sticking or overlapping. Examples of products that can cause tuning forks to stick and overlap include thick pulp and asphalt.
- 9. The product is not sensitive to foam (no need to consider foam). However, in very rare cases, very thick foam will be treated as a liquid. For example, this can happen during the manufacture of ice cream and orange juice.



7.Installation precautions:

1. When disassembling and assembling the instrument, it is forbidden to hold the shell by hand 2. and twist it, and use a wrench to turn the hexagonal bolt.

Rainproof measures should be taken after the instrument is installed on site to not allow liquid to penetrate into the junction box. When side- mounted, the electrical interface should face down; if there are two electrical interfaces, only one interface should be used when connecting the cable, and the other interface must be screwed on the plug cover!

8.Unpacking and inspection:

- 1.Before unpacking, please check that the outer packaging is not deformed or damaged, and take photos for evidence as the basis for subsequent compensation.
- 2. After unpacking, please check whether the contents are deformed or damaged and all quality problems, and take photos for evidence as the basis for subsequent compensation.
- 3. Please check whether the content matches the order and the quantity is correct.
- 4. If you have any of the above abnormal conditions, please contact our company (with photos) within 7 days, otherwise no replacement or repair will be provided free of charge.
- 5. Packing accessories: a) manual
- b) Product qualification certificate