

**INSTRUCTION MANUAL**  
**VIBRATING FORK POINT LEVEL SWITCH (LIQUID)**  
**HONEYBEE-AQUAFORK 7100 (PNP O/P)**

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**FUNCTION:**

The electronically stimulated fork vibrates at its mechanically resonance frequency of approx.2 KHz. If the liquid media or free flowing powder material covers the fork, the damping of the vibration is detected electronically and a corresponding signal output is actuated. The vibrating fork having self-cleaning properties.

The small deposit on the vibrating fork does not affect the operation of the AQUAFORK.

**MEASURING SYSTEM:**

The complete system, AQUAFORK -7000... series consists of: -

- The sensing probe of Vibrating Fork and
- The Electronic Switching unit

**PRIMARY AREA OF APPLICATION**

1. All types of liquid applications like Edible oils, Lubricating oils, Paints
2. Plastic industry, powder, granular etc
3. .Light free flowing power etc

**TECHNICAL SPECIFICATIONS:****CONTROL UNIT**

Parameters	Specifications
Housing	Cast Aluminum, weatherproof. Cable Entry 1 no.
Power consumption	1 Watt
Mains Voltage	24 V DC
Output	PNP (NC) OUTPUT rated at Approx 600 ohms. Resistance *Output is Sourcing.
Ambient temperature	0 ° C to +60° C
Switch status display	Red LED shows Alarm Conditions. Green led shows Normal Condition.

**SENSING PROBE (FORK):**

Parameters	Specifications
Mounting	Screwed – 1” BSP (standard) Flanged (as per requirement)
Fork	stainless steel- 316
Operating temperature	150 ° C max. (Inside vessel).
Probe Length	<b>60 mm (standard).</b> Customize As per Requirement.

**Time Delay Setting:**

**Setting ON Delay:**

Before setting ON Delay confirm that all four DIP switches are in off condition and instrument is in on. To set ON Delay in seconds DIP switch no.1 should be on position. Then press pushbutton switch to on and count no of led blinking.

As per your delay requirement measure led blinking and unpress the PUSH BUTTON switch.

**For Example:**

If we need to set 5 sec. on delay. Then we have to make on first DIP switch and then press PUSH BUTTON switch and start counting led blinking for 5 times. After complete 5 times led blinking unpress PUSH BUTTON switch. This will set 5 second ON delay.

After setting on delay in seconds DIP switch 1 should be in off position.

**Setting OFF Delay:**

Before setting OFF Delay confirm that all four DIP switches are in off condition and instrument is in on. To set OFF Delay in seconds DIP switch no.2 should be on position. Then press pushbutton switch to on and count no of led blinking.

As per your delay requirement measure led blinking and unpress the PUSH BUTTON switch.

**For Example:**

If we need to set 5 sec. OFF delay. Then we have to make on second DIP switch and then press PUSH BUTTON switch and start counting led blinking for 5 times. After complete 5 times led blinking unpress PUSH BUTTON switch. This will set 5 second OFF delay.

After setting OFF delay in seconds DIP switch 2 should be in off position

**FALE SAFE selection:**

Before setting PNP output confirm that all four DIP switches are in off condition and instrument is in on.

When dip switch 4 is off. PNP output is NC normally, after switching it will be NO

When dip switch 4 is on PNP output is NO normally, after switching it will be NC

## **Calibration:**

Before doing calibration all four DIP switches are in off condition and instrument is in on. Then dip the fork blades up to 50 percent in liquid in which it has to be calibrated. Hold instrument stable. Then make DIP switch no.3 to be ON. Then press PUSH BUTTON switch and measure led blinking count. After five times led blink, unpress the PUSH BUTTON switch and make DIP switch no.3 to be off position. Remove instrument from liquid. Then check the instrument by dipping it in liquid that it is switching or not.If its switching then instrument is properly calibrated.

## **INSTALLATION OF AQUAFORK:**

The standard unit has screwed mounting, which can be mounted laterally on the container wall at the desired level of the material to be controlled. The fork tines should be horizontally or pointed slightly downward.

Following precautions should be taken during installations -

The tines should not be bent or position distorted.

During filling operation, the material should not fall directly onto the tines. Otherwise protection shield should be provided over the tines.

During installation of probe with screwed mounting, turn the hexagonal mounting nut of the probe and not the housing.

For side mounting location the tines position should be such that the material can flow freely through them.

The knife-edges of the tines should face the ground plane in horizontal mounting position.

The tines should extend far enough into the vessel so that they are free to vibrate despite the build-up on the vessel wall. The extended probe should be mounted in such a way that it does not extend further than necessary in the vessel.

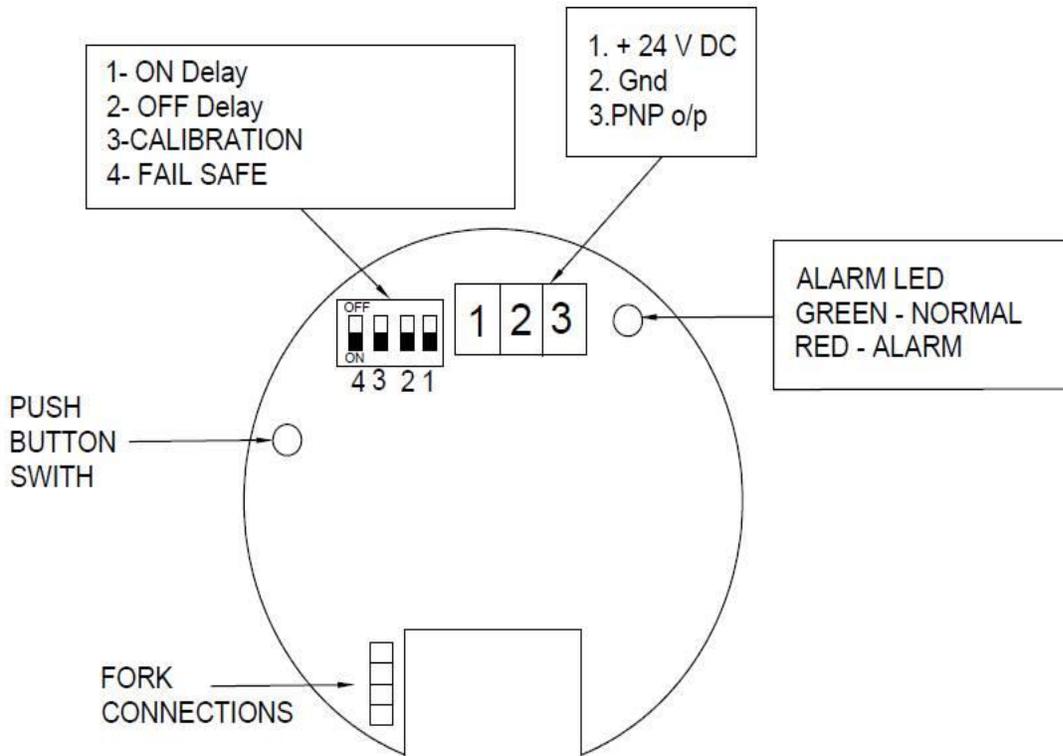
Turbulence during pneumatic conveying can cause operational problems and can be avoided by shielding the tines by windscreen.

For remote mounting of the Electronics Switching unit, the probe connection cable gland of the Cast Aluminum housing of the Switching unit should point towards ground plane.

## **ELECTRICAL CONNECTION TO AQUAFORK**

Please refer the connection diagram for the electrical connection. Appropriate mains voltage should be connected to the terminals of the instruments as specified. The connectors are suitable for 1.5 sq. mm cable cross section.

### Connection Diagram:-



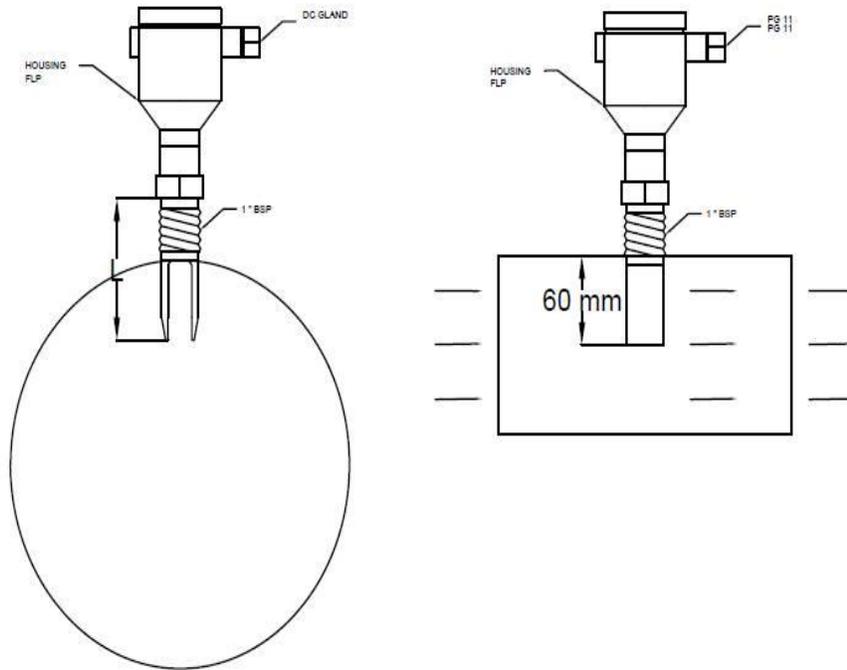
### MAINTENANCE:-

The AQUAFORK need no maintenance.

However, if the material has built up tendency, over a period of time, tines should be cleaned whenever need occurs.

Ensure that the cable glands and the housing lid are sealed to prevent ingress of moisture.

### MOUNTING OF PROBE



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