

INTRODUCTION

Vibrating Fork type Level Switches are single point level switches. Vibrating Fork type Level Switches are also known as Tuning Fork Level Switches. The electronics control unit is integral with the sensing probe. Vibrating level switches are used as overflow protection devices or low-level indicators in liquids as well as in granular and powdery bulk solids.

OPERATING PRINCIPLE

A specially shaped tuning fork is kept vibrating using piezo-electric elements. The oscillations of the fork dampen when it comes in contact with the application material. The loss of oscillation amplitude is detected and used for switching the output. The output contacts of the relay are in turn used for annunciation and / or control.



MAIN FEATURES

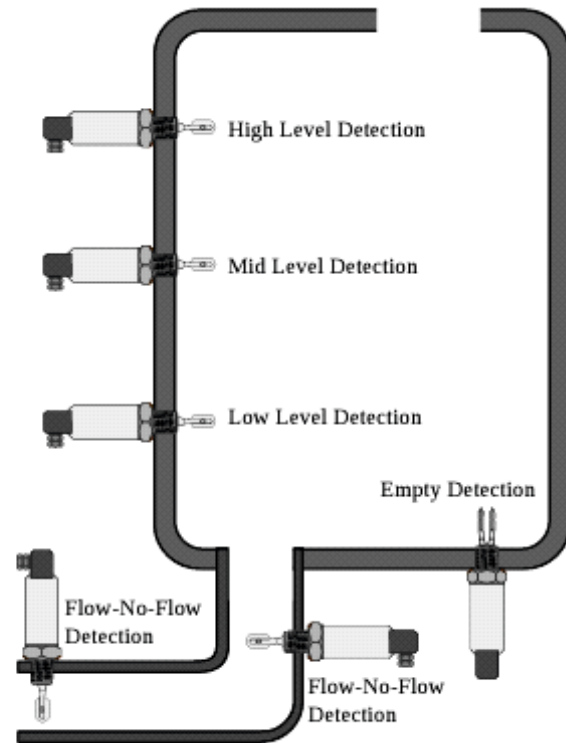
- Fast Switching Response 1 Sec
- Minimum 1/2" (LFV12) process connections
- High pressure up-to 15 bar
- High pressure up-to 150°C available
- Integral LED indication
- Threaded & Hygienic process connections
- IP 68 Protection, as per IS 13947

APPLICATION

- Fast packaging machines for powders, granules
- PET / PVC chips with underwater detection
- Powders, sand & sugar
- Iron ore, sinters & pulverized coal
- Dry sand & Fly-ash
- Food grains
- Cement

SPECIFICATIONS

1. Input Power Supply : 18 - 55V DC and 18 - 260V AC at 50Hz on same terminal
2. Output :
 - Relay DPDT
 - Relay SPDT, PNP
3. Power Consumption :
 - 1.5W (SPDT, PNP) at 24 V
 - 2.2W (DPDT) at 24 V
4. Switching: Single-point level switching
5. Switching Indication : Bi-Color LED on the electronics in
 - Green – Normal
 - Red - Alarm
6. Operating Temperature
 - Ambient Temperature: 0°C to 65°C
 - Process Temperature: 0°C to 100°C with option HT
7. Relay Rating : 6 Amp at 230 VAC
8. Electronics Type : Two Wire AC for series Relay
9. Density of media (min): 0.7 gm/cm³
10. Grain Size: A maximum of 12mm
11. Housing :
 - Pressure die-cast aluminium weatherproof (Rating IP-68)
 - Cast aluminium, weatherproof & flameproof, powder coated, suitable for Gas Groups IIA, IIB & IIC as per IS-2148
12. Electrical Connector : PG-13.5, 1/2" BSP DC Glands, 1/2" NPT DC Glands
13. Mounting :
 - Screwed - 1"/1.5" BSP/NPT (M)
 - Flanged - As per your specifications
 - Sanitary & SMS Union conn.
14. Sensing Fork : SS 316

TYPICAL MOUNTING POSITIONS :**MAINTENANCE**

The electronics of Vital instrument needs no maintenance. When cleaning and checking the vessel, free the tuning fork from deposits. If the material has tendency to form a hard sticky deposit, the instrument must be checked more often. Make sure that the cable ducts and the lid are tightly sealed so that no moisture seeps into the instrument.

INSTALLATION & HANDLING GUIDELINES

The fork should be installed in horizontal or vertical position. The following image displays different allowable installation positions. Observe that when installed directly under the material inlet source, a canopy called baffle of appropriate strength and size should be welded right above the fork as shown.

While installing the instrument, please take care of the following points:

- The instrument shouldn't block the material filling inlet.
- Secure the cover of housing tightly. Tighten the cable glands.
- For side-mounting, provide a baffle to prevent the application material from falling on the fork. Please refer to Figure 3.
- When handling forks, do not lift them using their tines. Please see Figure 4.
- The tines should not be bent and neither should their dimensions be altered. Deforming the shape of the tines may interfere with the fork's operating frequency. Please see Figure 4.
- Make all electrical connections as instructed in the manual. Don't power on the device before verifying the connections.
- To prevent the ingress of moisture and water seepage in side mounting position, the cable entries should always point downwards.

Figure 3:
Correct Side Mounting

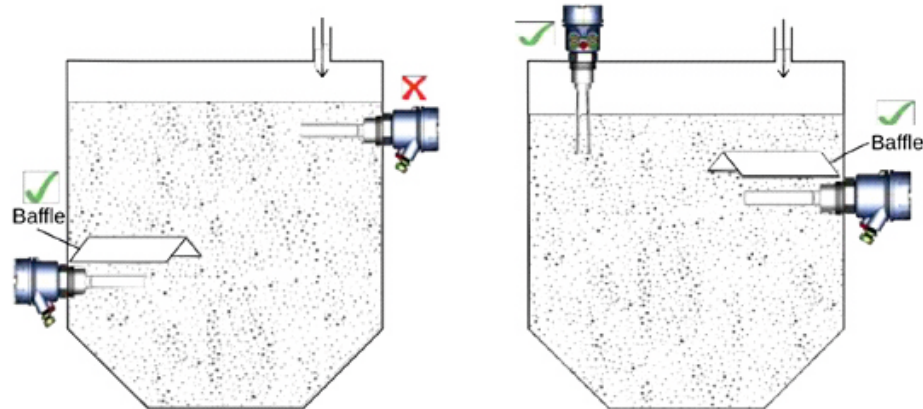
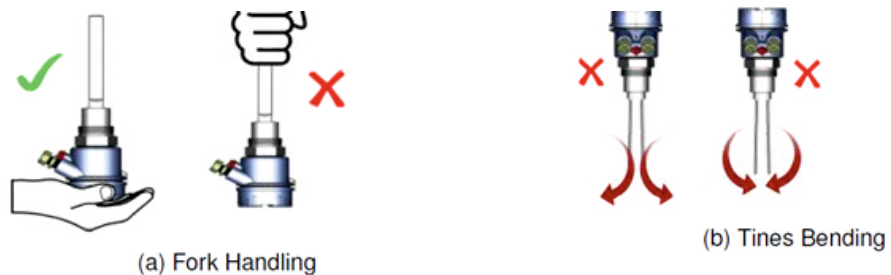


Figure 4:
Instrument Handling



Weatherproofness of enclosure is guaranteed only if the cover is in place glands adequately tightened. Damage due to accidental entry of water can be avoided if the instrument is installed in a rain shade.

- If the ambient temperature is high, the instrument should not be installed to receive direct sunlight. In case such a position of shade is not available, a heat shield should be fitted above the instrument especially if the operating temperature lies between 60°C and 80°C.
- While screwing the instrument, the hexagonal mounting bush should be turned and not the housing

ORDERING CODES

1. MEDIA

- S Solid
- L Liquid

S

4. LENGTH BELOW THREAD IN MM

150mm

150mm

2. TERMINATION

- W Weatherproof
- F Flameproof

W

5. FREQUENCY

- A Adjustable
- N Non - Adjustable

N

2. PROCESS CONNECTION

Flanged or thread size in mm
(enter manually)

1"BSP

ORDERING EXAMPLE : NI-VFS-S-W-1"BSP-150MM-N