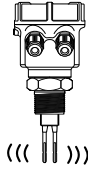


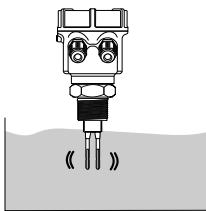
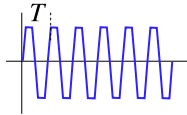
# Vibrating Fork Level Switch for Liquids



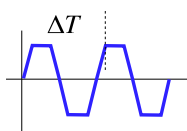
## Operating Principle



Electronics of LFV excites the piezo-electric-crystals inside tuning fork, which makes the fork tines vibrate at their natural resonance frequency in free air.



When fork tines are immersed in liquid, the frequency of fork vibration falls due to the density of liquid.



This change in frequency is detected by electronic circuit of LFV.

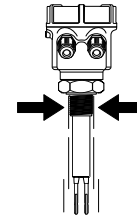
Presence of liquid is thus detected.

## Acid Safe Coatings



PTFE  
PFA  
HALAR  
TEFZEL ... etc

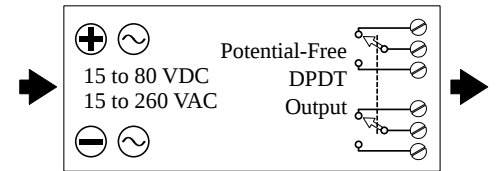
## Compact Process Connection



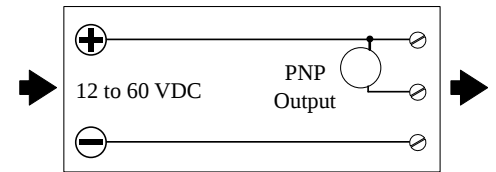
starting from:-

1/2" NPT  
1/2" BSP

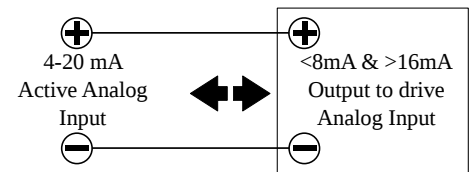
## Universal In DPDT Output



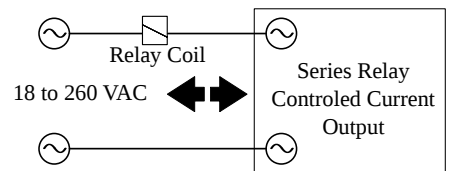
## PNP with DC Supply



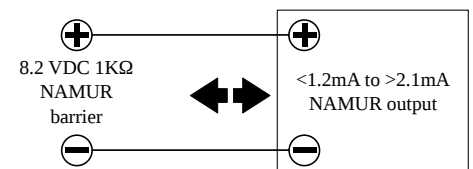
## Two wire 8/16 mA Signal



## Two-wire AC with Series Relay



## NAMUR (L-H & H-L edge)



As per IEC-60947-5-6

Compact Size

Durable Construction

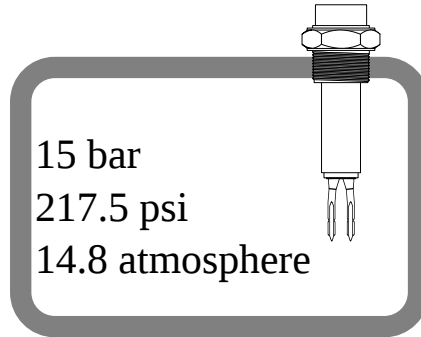
Immune to External Vibrations

No Calibration Required

Easy Installation

Order Code

## High Pressure Resistant Forks



15 bar  
217.5 psi  
14.8 atmosphere

- LFV Vibrating Fork Level Switch for Liquids
- Hxx Enclosure: HAN: Aluminum Non-Hazardous IP-66/68, HAX: Aluminum Flameproof Iia, Iib and Iic, HSN: Stainless steel, HPN: Polycarbonate (Plastic), HES: Specially designed as per customer requirement
- Tx Material Temperature (T1: max 80°C, T2: max 200°C, TS: Customer specified - Special designed)
- Sx Sensing Surface Material (S6:SS-316, SL, SS-316L, ST: PTFE coated, SF: PFA coated, SZ: TEFZEL, SH: HALAR coated, SS: Special surface)
- Gx Sensor Extension Material (G4: SS-304, G6: SS-316, GL: SS-316-L, GT: PTFE coated, GF: PFA coated, GZ: TEFZEL coated, GH: HALAR coated, GS: Special surface)
- Px Process Connection Type  
Process Connection Type (PFL: Flanged Type – description of flange - FL -at the end of order code)  
(PB1: BSP 1", PB2: BSP 1 1/2", PB3: BSP 3/4", PB4: BSP 1 1/4", PB5: BSP 1/2", PB6: BSP 2")  
(PN1: NPT 1", PN2: NPT 1 1/2", PN3: NPT 3/4", PN4: NPT 1 1/4", PN5: NPT 1/2", PN6: NPT 2")  
(PT1: Triclover/Triclamp 1.1 1/2", PT2: Triclover/Triclamp 2") (PCS: Special Process Connection)  
(PS1: SMS Union 1", PS1: SMS Union 2") (PD : Dairy Coupling)
- Cx Process Connection Material:  
(C4: SS-304, C6:SS-316, CL: SS-316L, CT: PTFE coated, CF: PFA Coated, CS: Special Material)
- EIUD Integral Electronics with Universal supply (15-80V DC & 15-260V AC) & 1 DPDT potential-free relay output
- EIDP Integral Electronics with DC power supply (12-80V DC ) & one short circuit safe PNP output
- EIDL Integral Electronics with Two wire DC supply with 8/16mA current output suitable for 4-20mA analog inputs
- EIAR Integral Electronics with Two wire AC supply for external series relay (>5mA holding current)
- EINL Integral Electronics for NAMUR with L-H edge output,
- EINH Integral Electronics for NAMUR with H-L edge output
- EIFS Integral Electronics Specially designed with special output
- ERUD Integral Electronics with Universal supply (15-80V DC & 15-260V AC) & 1 DPDT potential-free relay output with 10 meter special interconnection cable.
- ERFS Specially Designed Remote Electronics
- Lxxxx Insertion length (50mm to 3000mm)
- FLxx Flange type and bore size specified for ASA/ANSI/JIS/DIN/Custom

# LFV: Vibrating Fork Level Switch for Liquids

## Features

1. Fast Switching Response 1 sec
2. ½" screw mountings available
3. High pressure 15 bar forks
4. High Temperature up-to 250 °C available
5. Calibration-less operation
6. Remote electronics with std 10 meters cable length
7. External indication LED available
8. Threaded & Flanged Mountings
9. Electronic Inserts support all requirements
10. NAMUR (L-H / H-L) as per IEC-60947-5-6
11. Ingress protection : IP 68/65 (as per IS-13947)
12. Ex-proof (Ex d T6 IP-66 IIC )
  - Flameproof as per IS/IEC 60079-1:2007
  - Weatherproof (IP-66) as per IS/IEC 60529:2001
  - Suitable for Gas Group : IIC
  - Suitable for Zone 1 & 2 atmospheres

## Applications

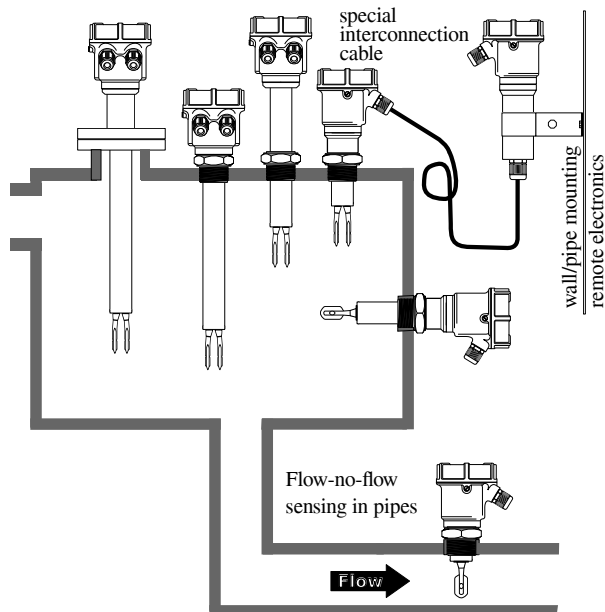
Vibrating fork level limit switch used as a full, empty and demand alarm in fluid containers, tanks containing liquids of various types.

Typical applications:

Edible oil, fuel oil, lube oil, brewery, pharmaceuticals, acids (PFA/PTFE & Halar coated), food processing liquids, fluid packing/ bottling applications etc.

Flow-No-Flow/Empty Pipe Detection

## Typical Mountings



## Specifications

<b>EIUD</b> Supply & Output	Integral Electronics DPDT Output Universal Supply DPDT Output 15 to 80 VDC 15 to 260 VAC 50/60Hz
Relay Rating	5 A each @ 24VDC or 220VAC
<b>EIDP</b> Supply & Output Output Limit	Integral Electronics for PNP Output 12 to 60 VDC, PNP 250mA max. Short Circuit Safe.
<b>EIAR</b> Supply & Output	Integral Electronics AC series relay Two Wire 18 to 260 VAC, Series Relay less than 4mA to release external relay maximum 150mA to magnetize relay
Output Limit	Use relays/contactors will less than 4mA holding current
<b>EIDL</b> Supply & Output	Integral Electronics 4-20mA Loop Powered Two Wire DC 8 / 16 mA 12 to 60 VDC
Output Limit	8mA (-1mA max) / 16mA (+1mA max)
<b>EINL/EINH</b> Supply & Output	NAMUR (L-H / H-L) as per IEC-60947-5-6 8.2 VDC (through NAMUR barrier/isolator)
<b>ERUD</b> Supply & Output	Remote Electronics DPDT Output Universal Supply DPDT Output 15 to 80 VDC 15 to 260 VAC 50/60Hz
Relay Rating	5 A each @ 24VDC or 220VAC
Sensor Cable	Remote electronics require special cable from fork to controller. 10 meter standard length (more available on demand)
Max. Viscosity	10,000 cStokes (= cPose/(g/cm <sup>3</sup> )) (Higher viscosity available on request)
Ambient Temp.	-20°C ... 60°C (-4°F ... 140 °F)
Process Temp.	-20°C ... 80°C (-4°F ... 176 °F)
Extended Process Temperature	-30°C ... 200°C (-22°F ... 392 °F) (extensions & heat sinks required)
Process Pressure	absolute / max. 15 bar
Wetted Parts	SS 316 or SS 316L, PTFE, PFA, TEFZEL, HALAR
Process Connections	NPT / BSP / Hygienic ½", ¾", 1", 1¼", 1½", & Flanged ANSI/JIS/DIN/ASA/custom
Extensions Tube Material & Length	SS 304, SS 316, SS 316L 50mm to 3,000mm Note: For ½" process connection, insertion length is fixed at 50mm excluding thread length.

Specifications are subject to change without prior notice