

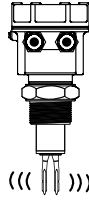
Vibrating Fork Level Switch for Liquids



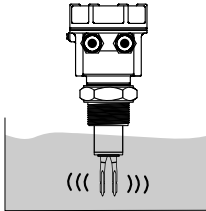
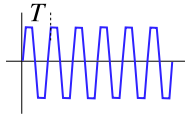
NAMUR-LH edge & HL edge



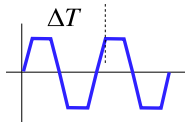
Operating Principle



Electronics of LFBV 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 LFBV.

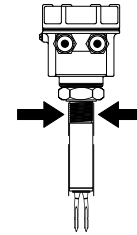
Presence of liquid is thus detected.

Acid Safe Coatings



PTFE
PFA
HALAR
TEFZEL ... etc

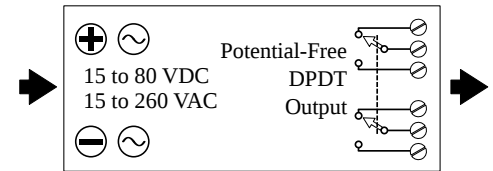
Compact Process Connection



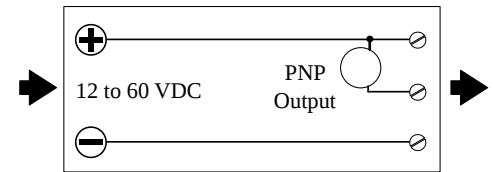
starting from:-

1/2" NPT
1/2" BSP

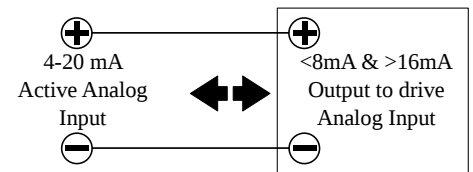
Universal In DPDT Output



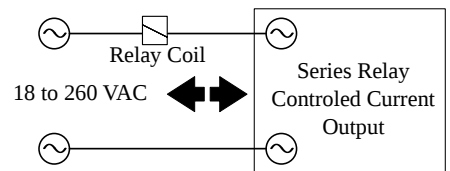
PNP with DC Supply



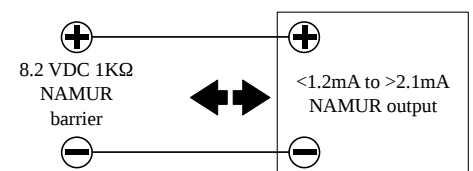
Two wire 8/16 mA Signal



Two-wire AC with Series Relay



NAMUR (L-H & H-L edge)



As per IEC-60947-5-6

Compact Size

Durable Construction

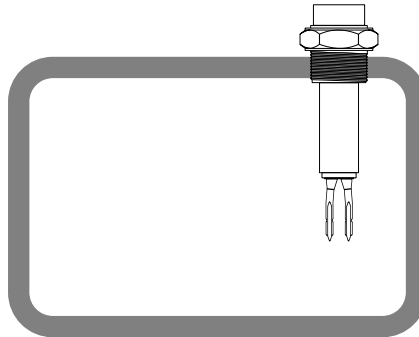
Immune to External Vibrations

No Calibration Required

Easy Installation

Order Code

High Pressure Resistant Forks



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
EINL	Integral Electronics for NAMUR with L-H edge output
EIUSP	Integral Electronics with Universal supply and 1 SPDT relay and one PNP output with DC supply
EIAR	Integral Electronics with Two wire AC supply for external series relay (>5mA holding current)
EIDL	Integral Electronics with Two wire DC supply with 8/16mA current output suitable for 4-20mA analog inputs
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
Lxxx	Insertion length (50mm to 3000mm)
FLxx	Flange type and bore size specified for ASA/ANSI/JIS/DIN/Custom

Technical Specification

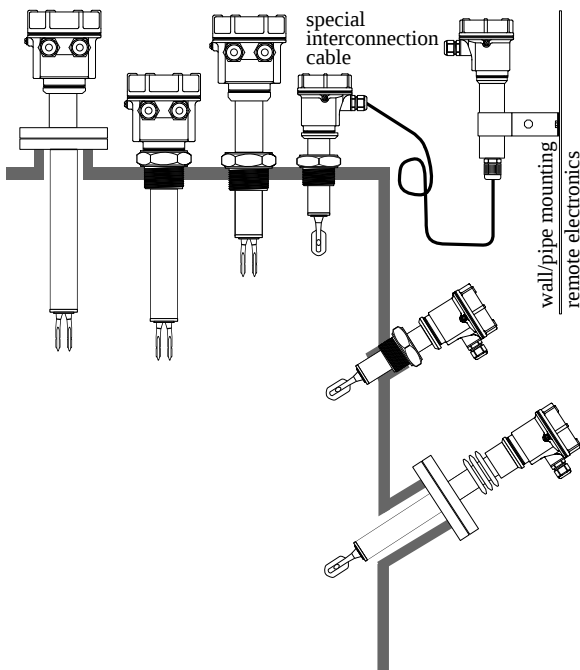
Features

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. NAMUR (L-H / H-L) as per IEC-60947-5-6
10. Ingress protection : IP 68/65 (as per IS-13947)
11. 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
12. Compact size
13. Vibration complied as per IEC 60068 part 2-6
14. Low power consumption

Applications

1. Free flowing liquids
2. Suitable for side as well as top mounting
3. Minimum and maximum failsafe field selectable
4. Process temperature max 200°C
6. Process pressure max.15 bar
7. Flow/no-flow detection in pipe-lines

Typical Mountings



Specifications

EIUD / ERUD Supply & Output	Integral / Remote Electronics DPDT Output Universal Supply DPDT Out 15 to 80 VDC 15 to 260 VAC 50/60Hz
Relay Contact	5 A each @ 24VDC or 220VAC
EIDP / ERDP Supply & Output Output Limit	Integral / Remote Electronics for PNP Output 12 to 60 VDC, PNP 250mA max. Short Circuit Safe
EINL/EINH Supply & Output	NAMUR (L-H / H-L) as per IEC-60947-5-6 8.2 VDC 1KΩ series resistance
EIUSP / ERUSP Supply & Output	Integral / Remote Electronics SPDT + PNP Output Universal Supply for SPDT Output 15 to 80 VDC 15 to 260 VAC 50/60Hz DC Supply for PNP Output 15 to 60 VDC
Relay Type and Rating	Potential Free SPDT Relay Output 5 A each @ 24VDC or 220VAC
PNP Output	250mA max. Short Circuit Safe
EIAR Supply & Output	Integral Electronics AC series relay Two Wire 18 to 260 VAC, Series Relay not less than 4mA to release external relay maximum 150mA to magnetize relay
Output Limit	Use relays/contactors will more than 4mA holding current
EIDL Supply & Output	Integral Electronics 4-20mA Loop Powered Two Wire DC 8 / 16mA & 4 / 20mA 15 to 60 VDC
Output Limit	8mA (±1mA max) / 16mA (±1mA max) 4mA (±1mA max) / 20mA (±1mA max)
EIPFM Supply & Output Output Limit	Integral Electronics PFM Sourced Powered From PFM Tester device < 30VDC PFM Output 50Hz / 150Hz 200μS, 10mA
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 ³)) (Higher viscosity available on request)
Ambient Temp.	-20°C ... 70°C (-4°F ... 158 °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
Vibration Test	As per IEC 60068 part 2-6 sinusoidal, 10-55Hz, 0.15mm
Extensions Tube	SS 304, SS 316, SS 316L
Material & Length	50mm to 3,000mm

Specifications are subject to change without prior notice