VIBRATING FORK LEVEL SWITCH FOR LIQUIDS- VFSL

It is a single point level switch based on piezo driven vibrating fork technology, suitable for detection of free flowing liquids/ slurry in tanks.

Integral System

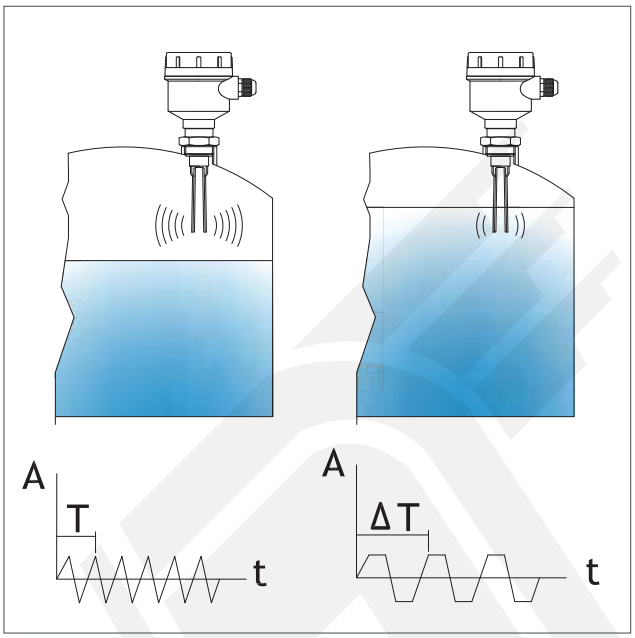
SALIENT FEATURES

- Rugged design with no moving parts
- Universal power supply 20 to 265 VAC/DC
- Self-clean probe, no build-up due to vibration technology
- Unaffected by variation in density, conductivity & dielectric constant
- Site selectable fail safe high/ low mode
- Sensitivity adjustment for viscous liquids
- Adjustable switching delay for turbulent/splashing applications
- Sanitary finish with Triclover Ferrule for hygienic applications
- Ex-proof /ATEX enclosure for hazardous area applications
- Choice of Integral (I) or Two Part System (T)

CONSTRUCTION AND OPERATION

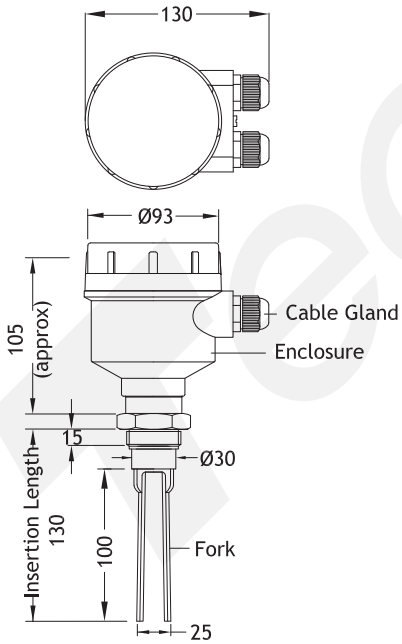
Available as Integral (I) or Two Part system (T). In the integral system, the controller is integral with the probe. In two-part system, the controller is separate from the probe.

An enclosure housing electronics is fitted at top of the vibrating fork. The fork vibrates in air at its resonance frequency through piezo electric crystal, which gets damped when it is covered with liquid. This is sensed by the electronics causing changeover of relay contacts which is further used to operate auxiliary devices.

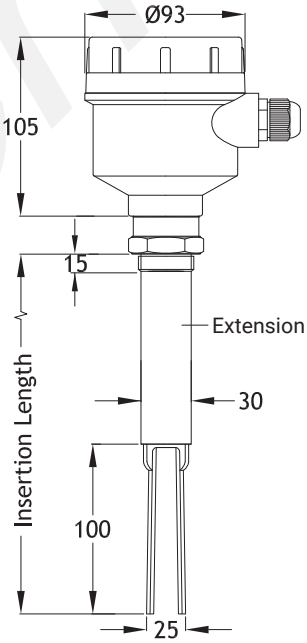


SCHEMATIC DIAGRAMS

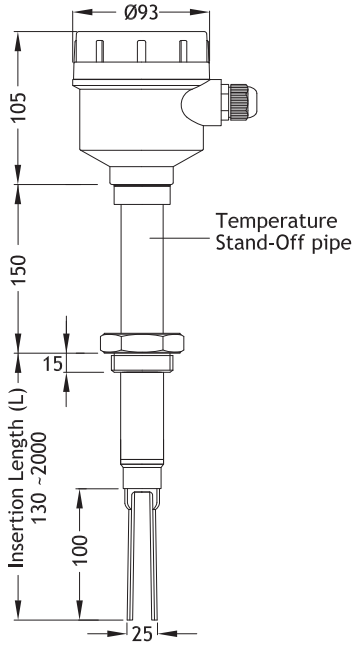
Integral System (I)



Standard Probe x WP Enclosure

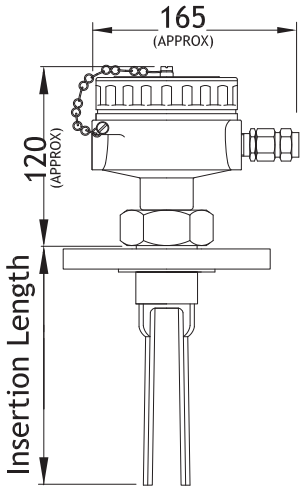


Probe with Extension x WP Enclosure

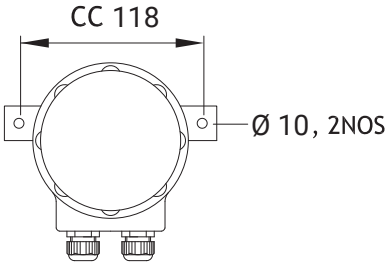


Probe with Temperature Standoff

Two Part System (T)



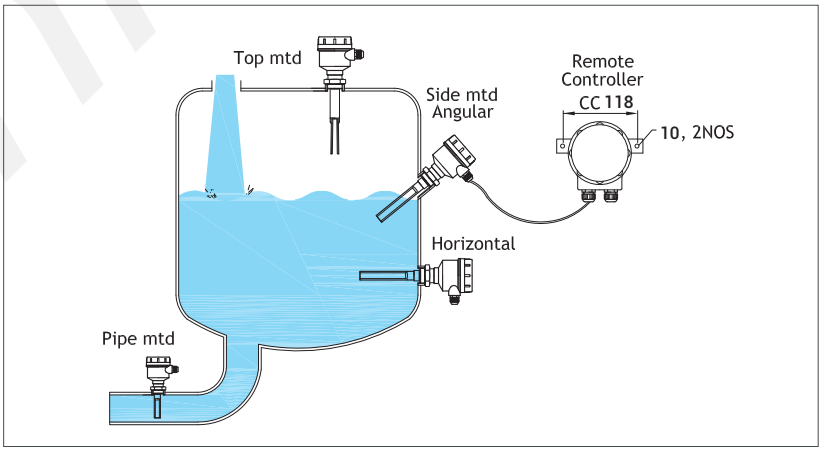
Probe std. or extended x
Enclosure WP or Ex-Proof



Remote Controller
x WP Enclosure

TERMINATION

INSTALLATION



SERVICES AND APPLICATIONS

Level Detection of Free Flowing Liquids like Water, Effluent, Milk, Vegetable Oil, Beer, Wine, Juice, Ketchup, Cough Syrup, Cream, Liquid Soap, Shampoo, Epoxy Resin, Paints, Solvents, Fuel, Diesel, Brine, Free Flowing Slurry, Wet Paddy Under Water.

Overfill or Dry run protection, Flow/no-flow detection in pipe line.

SPECIFICATIONS

PROBE	System	**Integral System (I)** (Probe with Integral Controller)	**Two-Part System (T)** (Probe with Remote Controller)
	Enclosure a. b.	Cast Al. IP66 Cast Al. Exd Gr. IIB / IIC T6, IP66	Cast Al. IP66 Cast Al. Exd Gr. IIB / IIC T6, IP66 Cast Al. ATEX Exd Gr. IIC T6, IP66
	Conduit Connection a. b.	M20 (Weather proof) ½" NPT (Ex-proof)	
	Cable Gland a. b.	M20 x 1.5 Cable Gland, PVC (Weather proof) ½" NPT DC Cable Gland, Brass (Ex-proof)	
	Fork MOC a. b.	SS316 (standard) SS316L or PTFE coated SS316 (option on demand)	
	Std. Insertion Length	130 mm	
	Max. Insertion Length	upto 3000 mm with extension	
	Extension MOC a. b.	SS304 or SS316 (standard) SS316L or PTFE coated SS316 (option on demand)	
	Process Conn. MOC a. b.	SS304, SS316 (standard) SS316L, PTFE coated SS316 Flange only (option on demand)	
	Process Connection	1" BSP or NPT (M) or 1½" NB Flange 150# (standard insertion length) 1½" BSP or NPT (M) or 1½" NB Flange 150# (extended insertion length) 50 mm Triclover Ferrule (optional)	
	Measuring Frequency	350 to 390 Hz	
	Max. Liquid Viscosity	10,000 CP	
	Temperature	-10 to 80°C, 150 °C with temperature standoff, 120 °C (PTFE ctd SS)	
	Max. Pressure	Vacuum to 10 kg/cm^2 (High pressure option on demand)	

CONTROLLER	Enclosure (Remote)	NA	Cast Al. IP66
	Conduit Conn. (Remote)	NA	M20
	Cable Gland (Remote)	NA	M20 x 1.5 Cable Gland, PVC
	Supply	20 to 265 VAC/DC 24 VDC ±10% (for PNP O/P) (Reverse protection for DC supply)	
	Output 1. 2.	Relay x 2 SPDT, potential free contacts, 5A, 250 VAC (resistive load) Transistor PNP, non- isolated, load 180 mA maximum	
	Indication LED	Blue – Normal, Red – Alarm	
	Adjustable Switching Delay	Covered - 5 to 20 sec Uncovered – 5 to 20 sec	
	Sensitivity Adjustment	For viscous liquids through trim pot	
	Fail Safe Operation	High or low selectable through DIP switch	
	Power Consumption	<100 mA	
	Amb. Temperature	-10 to 60°C	
	Humidity	95% Rh Non- condensing	
	Interconnecting cable	NA	3 core x 1.5 mm^2 PVC insulation (Buyer's Scope)

MODEL IDENTIFICATION

VFSL-	I	J	S	N	S	S	W	R
1. System								
Integral (Probe with Integral Controller)	I							
Two Part (Probe with Remote Controller)	T							
2. Enclosure x Cable Gland of Probe								
Cast Al. IP66 x M20 x 1.5 Cable Gland, PVC		J						
Cast Al. Exd. Gr. IIB x ½" NPT DC Cable Gland, Brass		E						
Cast Al. Exd. Gr. IIC x ½" NPT DC Cable Gland, Brass		F						
Cast Al. ATEX Exd. Gr. IIC x ½" NPT DC Cable Gland, Brass (Sys T)		G						
Others		O						
3. Fork MOC								
SS316			S					
Others			O					
4. Process Connection/ Extension MOC								
SS304				N				
SS316				S				
Others				O				
5. Process Connection								
1" BSP (M) Screwed (standard insertion length)					S			
1½" BSP (M) Screwed (extended insertion length)					P			
1½" NB ASME 150 # Flange					F			
50 mm Triclover Ferrule					H			
Others					O			
6. Maximum Temperature								
80 °C						S		
150 °C (with temperature stand off)						H		
7. Enclosure x Cable Gland of Remote Controller								
Without (Sys-I)							W	
Cast Al. IP66 x M20 x 1.5 Cable Gland, PVC							J	
Others							O	
8. Output								
Relay x 2 SPDT potential free contacts, 5A 250 VAC								R
Transistor PNP (Supply : 24 VDC ±10%)								P

x Insertion Length

ORDERING INFORMATION

Model Number x Probe Insertion Length (mm) x Liquid x Viscosity x Operating Temperature & Pressure.

*All dimensions in mm except specified

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