

# 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 (I)**  
Probe x WP Enclosure



**Integral System (I)**  
Probe x Ex-Proof Enclosure



**Two Part System (T)**  
Probe x Remote Controller (WP Enclosure)

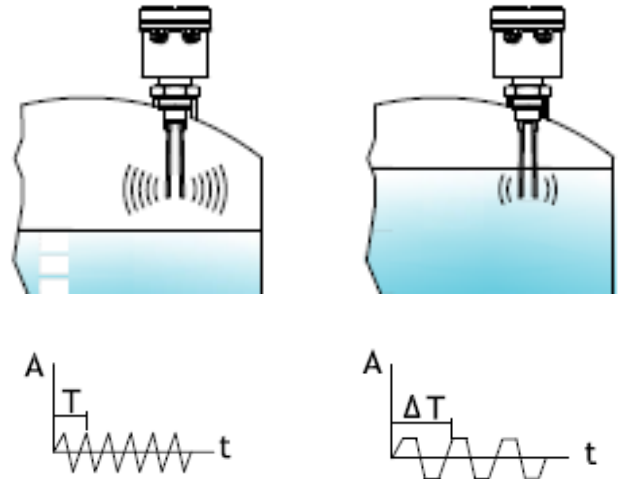
## SALIENT FEATURES

- 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 & OPERATION

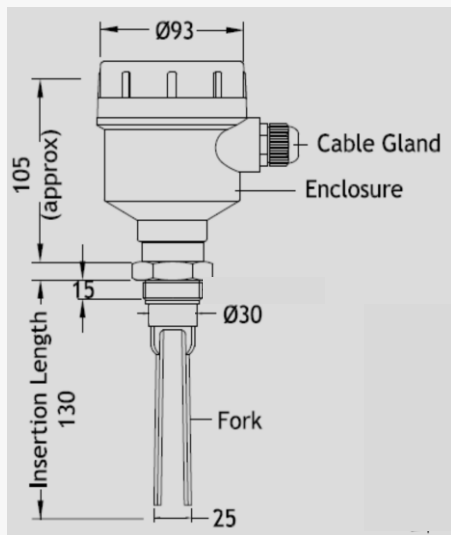
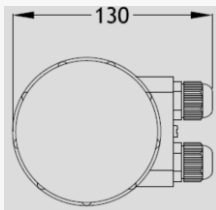
Available as Integral (I) or Two Part system (T). In the integral system, the controller is integral with the probe. In two- part system, the controller is separate from the probe.

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.

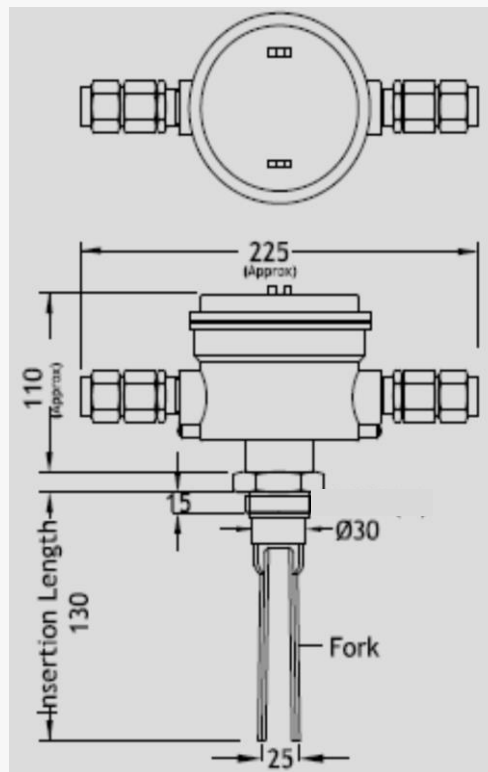


## SCHEMATIC DIAGRAMS

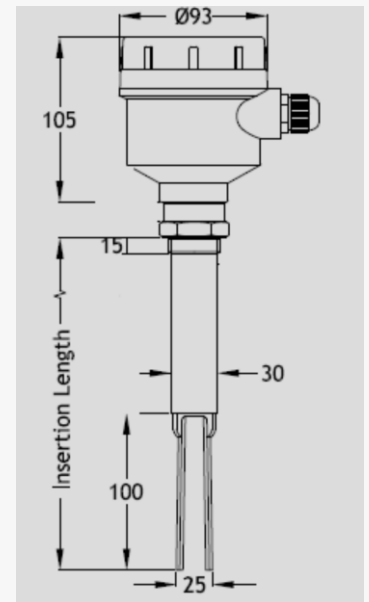
### Integral System (I)



Standard Probe x WP Enclosure

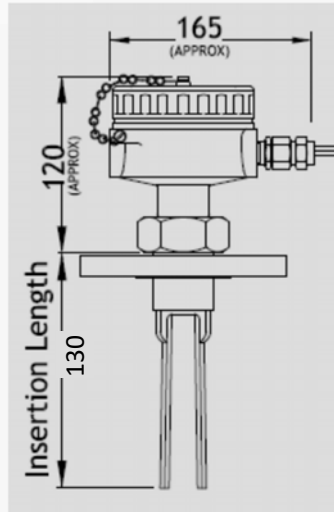


Standard Probe x Ex-Proof Enclosure

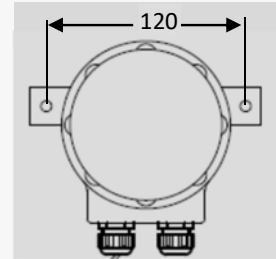


Probe with Extension x WP Enclosure

**Two Part System (T)**



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



Remote Controller x WP Enclosure

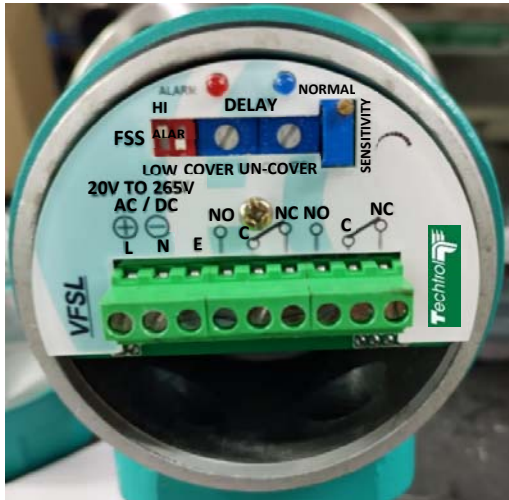
**SPECIFICATIONS**

System	Integral System (I) (Probe with Integral Controller)		Two-Part System (T) (Probe with Remote Controller)	
	Enclosure	a.	Cast Al. IP66	a.
	b.	Cast Al. Exd Gr. IIB / IIC T6, IP66	b.	Cast Al. Exd Gr. IIB / IIC T6, IP66 Cast Al. ATEX Exd Gr. IIC T6, IP66
Conduit Connection	a.	M20 (WP)		
	b.	1/2" NPT (Ex-proof)		
Cable Gland	a.	M20 x 1.5 Cable Gland, PVC (WP)		
	b.	1/2" NPT DC Cable Gland, Brass (Ex-proof)		
Vibrating Fork MOC	a.	SS316 as standard		
	b.	SS316 or PTFE coated SS316 available optionally		
Std. Insertion Length	130 mm			
Max. Insertion Length	upto 3000 mm with extension			
Extension MOC	a.	SS304 or SS316 (as standard)		
	b.	SS316L or PTFE coated SS316 (option on request)		
Process Conn MOC	a.	SS304, SS316 (as standard)		
	b.	SS316L, PTFE coated SS316 Flange only (option on request)		
Process Connection	1" BSP or NPT (M) or 1-1/2" NB Flange 150# (standard insertion length) 1-1/2" BSP or NPT (M) or 1-1/2" 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 150 °C, 120 °C (PTFE ctd. SS)			
Max. Pressure	Vacuum to 10 kg/cm <sup>2</sup> (High pressure option on demand)			

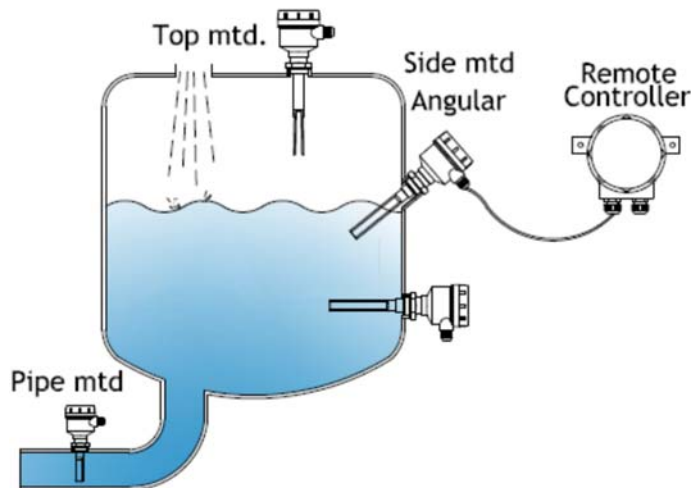
PROBE

<b>CONTROLLER</b>	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 260 VAC/DC 24 VDC $\pm 10\%$ (for PNP O/P) (Reverse protection for DC supply)	
	Output	1. Relay x 2 SPDT, potential free contacts, 5A, 250 VAC (resistive load) 2. 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 <sup>2</sup> PVC insulation (Buyer's Scope)

## TERMINATION



## INSTALLTION



## 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.

## MODEL IDENTIFICATION

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

## ORDERING INFORMATION

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

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