

TFL Series Turning Fork Level Switch

PRODUCT DATA



Features

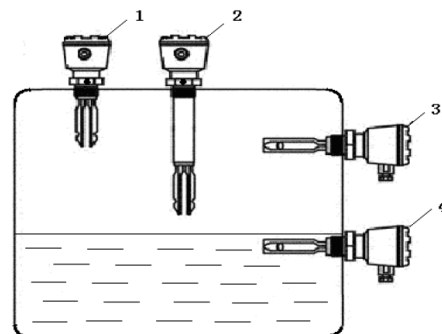
- Function virtually unaffected by flow, bubbles, turbulence, foam, vibration, solids content, coating products, liquid properties, and product variations
- The TFL is designed for operation in process temperatures from -40 to 150 °C
- 'Fast drip' fork design gives quicker response time, especially with viscous liquids.
- Fork shape is optimized for polishing to meet hygienic requirements.
- No moving parts or crevices for virtually no maintenance
- A 'heartbeat' LED indicates its operating state.
- General area, explosion-proof/flameproof
- Increased safety, SIL2-certified to IEC 61508 and SIL3 capable

Principle

The TFL is designed using the principle of a tuning fork. A piezo-electric crystal oscillates the forks at their natural frequency. Changes to this frequency are continuously monitored. The frequency of the vibrating fork sensor changes depending on the medium in which it is immersed. The denser the liquid, the lower the frequency. When used as a low level alarm, the liquid in the tank or pipe drains down past the fork, causing a change of natural frequency that is detected by the electronics and switches the output state.

Application

- Overfill protection
- High and low point level alarms
- Pump control or limit detection
- Run dry or pump protection
- Hygienic applications
- High-temperature applications



1/2/3: High detection 4: low detection

Specification

Working temperature range: $-40^{\circ}\text{C} \sim 150^{\circ}\text{C}$
 Ambient temperature: $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$
 Ambient humidity: $\leq 95\% \text{RH}$
 Medium: Liquid, powder or granular solid
 Medium density: solid $\geq 0.1\text{g/cm}^3$
 Liquid $\geq 0.7\text{g/cm}^3$
 solid particle size: $\leq 10\text{mm}$
 Max. liquid viscosity: $< 1000\text{mm}^2/\text{S}$
 Max. working pressure: $\leq 4\text{MPa}$
 Shell material: die-cast aluminum alloy
 Fork body material: SS304/SS316
 Shell protection level: IP65
 Process connection: G1 thread
 Flange
 Electrical parameters:
 Power supply voltage: 20...60VDC
 20...250VAC 50/60Hz
 Output signal: Relay output
 AC250V/4A
 DC60V/4A
 Power consumption: 0.25W for DC power supply
 1.5W for AC power supply
 Switch signal action time: 1-60S



Dimension



Selection

TFL			
L	For liquid	Medium	
S	For solid		
	1	Relay output	Output
	Z	Others	
	0	Standard (insertion 100mm)	Fork form
	1	Extension	
	T	Thread G1"	Process connection
	F	Flange	
	Z	Others	
	N	Safe environment	Application environment
	D	ExdIICT6Gb	
	S	$-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$	Working temperature
	M	$-40^{\circ}\text{C} \sim 150^{\circ}\text{C}$	