Tuning Fork Level Switches

The Series TFLS Tuning Fork Level Switch is ideal for level control of powders and fine grained solids, especially those with a low bulk density. The TFLS incorporates a piezoelectric crystal that vibrates the fork at its natural frequency, when contact material is present it dampens the vibrations and the switch changes state.

**FEATURES/BENEFITS**
- Status indication with external LED switch indicator, and internal indicators for normal and alarm status
- No calibration required for quick and easy installation
- No mechanical moving parts with no routine maintenance required
- Unaffected by the dielectric constant of the sensed material, making it superior to a capacitance level switch for applications where the dielectric constant is too low, where there is more than one material being used in one vessel, and when material moisture content can change
- Vibrating fork design is ideal for low bulk density and low dielectric constant products, detecting products down to 1.8 lb/ft³ (30 g/l)
- Ideal for applications where the bulk density is too low for a rotating paddle level switch
- Adjustable sensitivity can be set to ignore lighter bulk density products and only detect heavier products, such as sand, gravel, or polyester chips in water
- Unit is not affected by vibration from conveying systems, motors, or the movement of material
- Mounted in any position and is available with factory built extensions for mounting on the top of the storage vessel
- Fail-safe setting with output switch that can be set for NO or NC condition on loss of power
- Time delay prevents false alarms from material surges
- Universal power supply yields one model which works with 90-265 VAC and 24 VDC

**APPLICATIONS**
- Pulp and paper processing
- Food and beverage
- Chemical processing
- Fibers, detergent powders, dyes, chalk, silica, sand, wood chips
- Lime, styrofoam, tobacco, dry cereals, sugar, animal feed, milk powder, flour, insulation, cement, paper shavings, plastic granules, sawdust, carbon black, light fibers, detergent powders, dyes, chalk, silica, sand, wood chips

**MINI TUNING FORK LEVEL SWITCH**

**MINI TUNING FORK LEVEL SWITCH**

Compact, Cost Effective, DIN Connection

The Model CTF Mini Tuning Fork Level Switch is an ideal choice for level control of powders. The CTF incorporates a piezoelectric crystal that vibrates the fork at its natural frequency, when contact material is present it dampens the vibrations and the switch changes state. This series offers a PNP or NPN output.

**FEATURES/BENEFITS**
- DIN connection and compact size allows for application in places a larger tuning fork level switch may not be suitable, providing great versatility
- No mechanical moving parts with no routine maintenance required
- Unaffected by the dielectric constant of the sensed material, making it superior to a capacitance level switch for applications where the dielectric constant is too low, where there is more than one material being used in one vessel, and when material moisture content can change
- Ideal for applications where the bulk density is too low for a rotating paddle level switch

**APPLICATIONS**
- Chemical processing
- Pulp and paper processing
- Mining
- Food and beverage

**SPECIFICATIONS**

Service: Dry powder compatible with wetted materials. Can detect bulk materials submerged in liquid.

Wetted Materials: 316 SS.

Temperature Limits: Ambient: -4 to 140°F (-20 to 60°C); Process: -4 to 176°F (-20 to 80°C).

Pressure Limit: 145 psig (10 bar).

Power Consumption: 4 VA.

Enclosure: Aluminum, powder coated.


Switch Type: SPDT.

Electrical Rating: 5 A @ 230 VAC.

Power Requirement: 90-265 VAC, 50/60 Hz, 24 VDC.

Power Consumption: 4 VA.

Indication Lights: External Red LED, Internal Green and red LED’s.

Sensing Delay: (Max) covered probe: 2 s; Uncovered probe: 3 to 7 s.

Time Delay: Separate settings for covering and uncovering the probe. Adjustable from 2 to 20 s.

Weight: 5.5 lb (2.5 kg).

**MODEL CHART**

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<td>Mini tuning fork level switch with PNP output</td>
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<td>CTF-03</td>
<td>Mini tuning fork level switch with PNP output</td>
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**SPECIFICATIONS**

Service: Dry powder compatible with wetted materials.

Sensitivity: Min. bulk solid density: 4.4 lb/ft³ (70 g/l).

Wetted Materials: Tuning Fork: 316 SS; Process: 304 SS.

Temperature Limits: Ambient: -40 to 140°F (-40 to 60°C); Process: -40 to 212°F (-40 to 100°C).

Pressure Limit: 600 psi (40 bar).

Power Requirement: 12-55 VDC.

Power Consumption: 10 mA @ 12-24 VDC.

Enclosure: Aluminum, painted.

Enclosure Rating: IP65.

Switch Type: 3-wire PNP or NPN output.

Electrical Rating: 350 mA (max) @ 12 to 55 VDC.

Conduit Connection: Valve plug DIN 43650.

Process Connections: 1” male NPT.

Indication Lights: External red LED.

Sensing Delay: Max. covered probe: 1 to 3 s; Uncovered probe: 1 to 3 s.

Weight: 2.2 lb (1.0 kg).