



Grown...to meet challenges

30+ years in Process Control Instrumentation

ELIXIR - Microcontroller Based Vibrating Fork Liquid Level Limit Switch

Version 2.1

Elixir vibrating fork is a level switch for liquids and is used in tanks, containers and pipelines. As a sturdy replacement of conventional float switch, Elixir offers a variety of built-in features non-existent in floats and other switches, e.g. where materials are sticky, corrosive, agitated, splashing, foaming and having uncertain electrical properties. Elixir vibrating fork is suitable for hazardous areas, available with explosion-proof housings certified by CMRI, Dhanbad.

Principle

A specially shaped tuning fork is kept vibrating using piezo-electric elements. Typically, the fork vibrates at its natural frequency. The frequency of oscillation for the tuning fork changes when immersed in liquids. The change in frequency is detected by the microprocessor leading to a switching decision.

Approvals CE Marking, RoHS Compliance, IP-67 Marking



Features

- Less Power Consumption: Less Heat, Long Life
- True Universal Power Supply: 18 to 55 V DC, 90 to 265 V AC on same terminals
- Fluid Temperature Durability -
 - Standard model up to 80°C
 - H1 model up to 150°C
 - H2 model up to 200°C
 - H3 model up to 300°C
 - H4 model up to 400°C
- Suitable up to 10,000 cP (Detects all Industrial Fluids)
- Compact Size: Less Inventory
- Self-Diagnosis (System Fault Alarm & Fork Erosion Alarm)
- Unaffected by Fluid Movement & Gas Bubbles
- Independent of Fluid Electrical Properties
- Cover and Remote Versions
- Adjustable Insertion Length

Mounting Arrangement

The mounting arrangement for Elixir is explained in Figure 1.

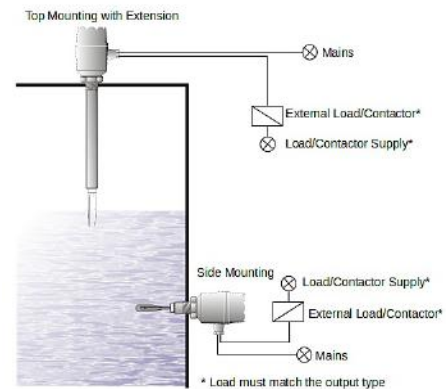


Figure 1

Part Diagram

The part diagram for Elixir is explained in Figure 2.

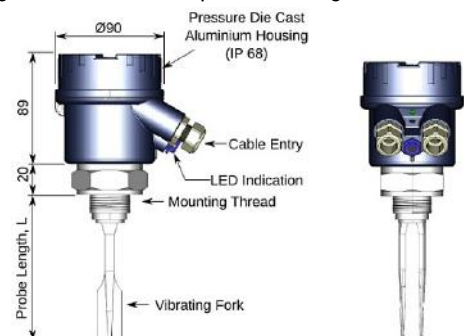


Figure 2

Manufacturing Level Instruments & Speed Monitoring Systems

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Technical Specifications

Mechanical Specifications

Housing :

SCUTE: Pressure Die Cast Aluminium weather proof (IP-68)
 FP2C: Cast Aluminium weather & flame proof stoving enamel
 painted suitable for Gas Group IIC

Type : Integral with Fork

Cable Entry : Double Compression Gland / PG 13.5

Resonant Frequency : From 400Hz to 600Hz (1.2KHz to 1.4KHz)

Sensing : Resonating Fork, SS-316

Mounting :

Screwed: 1/2" to 1" BSP/NPT (M)

Flanged: As per order

Material: SS 304 / SS 316 / SS 316L

Extension : SS 304 / SS 316 / SS 316L

Probe Length : Extension Length + Fork Length (44mm/100mm)

Wetted Parts :

S4: SS-304

S6: SS-316

HL: Halar Coated

Material Temperature : Up to 200°C

Electrical Specifications

Output : SPDT Relay output 1NO, 1NC (Relay rated at 6 A, 230 V AC for non-inductive load) and PNP output (only for supply voltage 18V to 35V DC)

Power Consumption : 400 mili-Watt maximum

Fail-safe Setting :

Field selectable (Min : Failsafe Low, Max : Failsafe High)

Response Time : 0.5 seconds

Time Delay Settings : Cover & Uncover Delay : 1 - 20 sec through DIP switches

Sensitivity Setting : Field Selectable (through toggle switches)

Mains : 90 to 265 V AC at 50/60Hz & 18 to 55 V DC

Switching Indication : Bi-color LED, Red: Alarm, Green: Normal

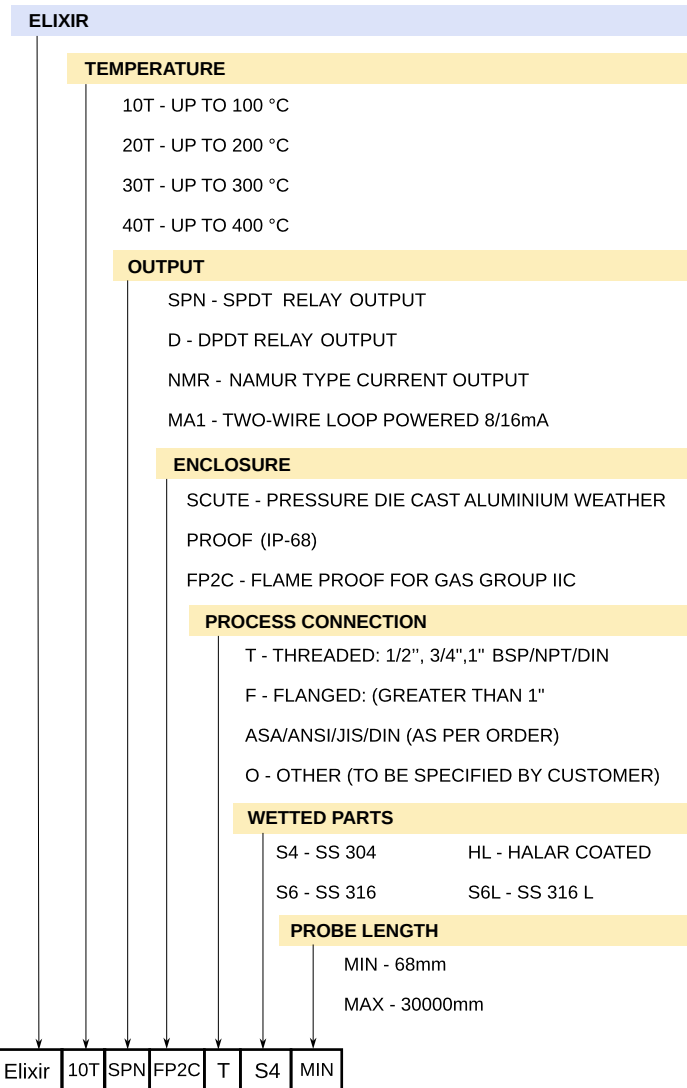
Minimum Fluid Density : 0.7 gm/cc

Maximum Fluid Viscosity : 10,000 cP

Switching Hysterisis : 5mm (approximate)

Dimensions : Refer Drawings/Customer Support

Model Selection



Applications

Elixir liquid level limit switches are successfully used in processing plants for liquids having viscosity up to 10,000cP and densities greater than or equal to 0.7 gm/cc. Recommended for quick installation small entries pipes and mixing tanks. Elixir caters to -

- Pharmaceuticals
- Dairy
- Textile
- Chemicals
- Petrochemicals
- Confectionary
- Distillery
- Packaging
- Paper
- Power
- Brewery
- Food
- Pesticides
- Bulk Drugs
- Cosmetics
- Edible Oil
- FMCG
- Utility
- Sugar
- Paint

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