

### Vibrating Liquid Level Switch

The Loop Powered VF30 utilizes a piezoelectric driven tuning fork that exhibits a large change in resonant frequency when immersed in any liquid. A “smart” microprocessor-based electronic unit keeps the sensor in a resonant state as it changes from dry to wet or wet to dry. The resonant frequency is continuously monitored for changes created by a wet or dry sensor and an alarm is provided via an 8 or 16 ma dc signal. An important feature of the Vector is that its resonant frequency is not significantly affected by coating on the fork until the space between the forks is bridged. Vector’s ability to identify true liquid level in viscous, coating or aerated liquid is unparalleled. The self-test option checks for fault conditions such as sensor failure and excessive product build up on the sensor. Applications include redundant high/low liquid level without concern for parameters such as specific gravity, dielectric constant or mounting position of the sensor.



#### FEATURES:

- Direct Replacement For Ultrasonic Gap Or RF Capacitance Switches
- Superior Resistance To Coating Or Build-Up On Sensor
- Any Mounting 3/4" NPT Or Larger
- No Calibration Required
- Loop Powered

#### OPTIONS:

- Integral System-Diagnostics / Self-Test
- Adjustable Time Delay (0.1 – 10 seconds)
- Alarm Status LED
- Field Selectable Fail-Safe
- Dual Compartment Housing
- Ceramic Glass To Metal Feedthrough Provides Secondary Pressure Boundry
- Special alloy sensors:
  - Hastelloy C-276
  - Monel

#### SPECIFICATIONS:

Switch Type:	Frequency-shift Tuning Fork
Operating Power:	13.5-36 VDC Loop Powered
Loop Output:	8 +/- 1mADC or 16 +/- 1mADC (selectable) Fault = 20 +/- 1 mADC or 4 +/- 1 mADC
Response Time:	0.1 seconds
Hysteresis (Deadband):	Approx. +/- 1/8 in.
Repeatability:	+/- 0.1 in.
Time Delay:	0.1-10 seconds (adjustable)
Operating Temperature:	Electronic: -40°F (-40°C) to 165°F (74°C) Ambient Sensor: -40°F (-40°C) to 300°F (149°C)
Operating Pressure:	0 PSIA to 600 PSIG (41 Bar) (Contact Factory for higher pressures)
Features:	Continuous Self-Test. Alarm status LED indicates wet, dry or fault. Adjustable time delay (.01 to 10 second)
Approvals:	<b>Factory Mutual &amp; Canadian Standards Association Hazardous Area Rating:</b> XP / I / 1 / ABCD / T6 Ta=74°C; DIP / II, III / 1 / EFG / T6 Ta=74°C IS / I, II, III / CDEFG / T4 Tamb=77°C; NI / I, II, III / 2 / ABCDFG / T4 Tamb=77°C ELE1011/ 9/01/99 NEMA 4X
Conduit Connection:	Single Compartment: 3/4" FNPT (19 mm) Dual Compartment: 1/2" FNPT (13 mm)
Specific Gravity:	0.45 Minimum
CRN Registered:	OF4752.2



**ORDERING INFORMATION:**

**VF30 / a / b / c / d / e / f / g / PL**

/a = Operating Power

0 = Loop Powered (12.5 to 35 VDC)

/b = Process Connection

P7 = 3/4" MNPT (Standard) , P1 = 1" MNPT,

B1 = 1" BSPT

WP = Welded Flange (Specify type & size, SLG-0001-1)

FL = Loose Flange (Specify type & size, SLG-0001-1)

/c = Sensor Material

S6 = 316L SS (Standard)

HC = Hastelloy C-276

MO = Monel

/d = Probe Finish

Blank = Standard Finish

1F = 180 grit finish (suitable for 3A service)

2F = 240 grit finish

EP = 240 grit and Electropolished

/e = Special Options (omit if not required)

HT = High Temperature (>250°F) Extension

MM = M20 Conduit Connection

HS = 5 Pin Hermetic Feed-through

/f = Housing Single Compartment Aluminum Standard

Optional, for loop-power version only:

A = Alum. dual compartment housing

S = Stainless Steel dual compartment housing

R = Remote housing (50 ft./ 15.25 m maximum)

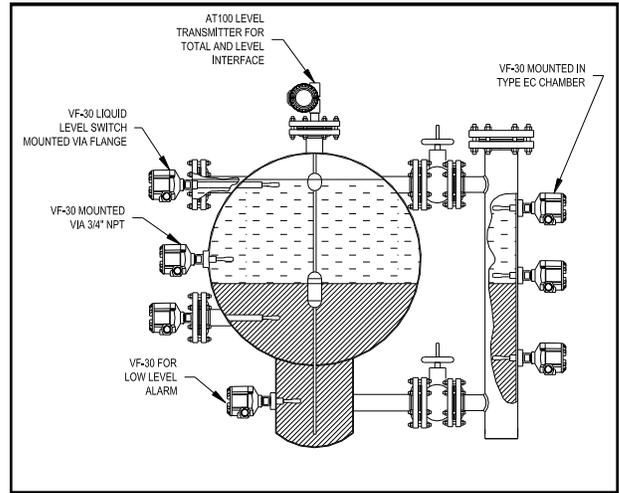
/g = Approval

FM = Factory Mutual Research Corp. (FM)

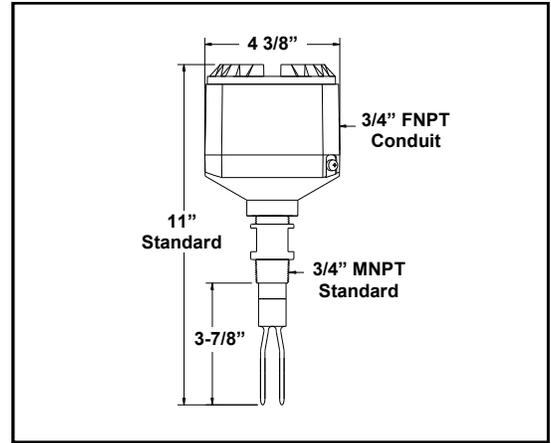
CSX = CSA Explosion Proof

CSI = CSA Intrinsic Safe (only with loop powered option)

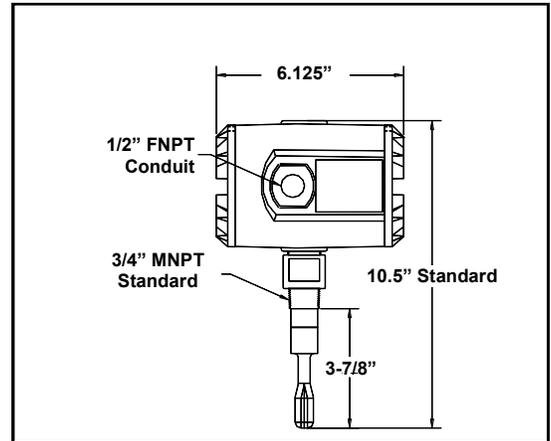
/PL = Probe Length: 3-7/8" Standard; Specify extended lengths in 1" increments up to 100" (2540 mm).



**VF30 Sample Applications**



**Standard Outline Dimensions**  
\*Trip Point 3/4" from probe end type.



**Optional Dual Compartment Dimension**