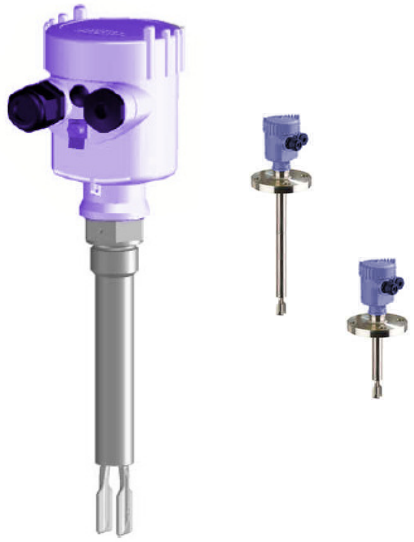
DATASHEET

Vibrating Fork Liquid Level Switches

MTG Vibrofork 63



Application

Vibrofork vibrating tuning fork level switches can be used on almost any liquid, from LPGs to bitumens. As a fail safe level switch it can be installed in any orientation, above, below or sideways even in pipework.

How Reliable Is It ?

Vibrofork level switches have SIL2 conformance. This means our liquid level switches have been tested for reliability and performance to ensure on hazardous products or processes they won't let you down and fail safe. Vibrofork also has WHG overfill certification, an environmental certification by TUV in Germany.

- SIL 2 compliant for high integrity version
- SIL 3 if two are used with "voting" logic
- WHG overfill protection approvals for safety and environment (can assist with ISO14001 compliance)
- Option for remote self test facility to revalidate system integrity

Features and Benefits

- Very cost effective, low maintenance, high reliability
- Unaffected by changing temperature, pressure, conductivity, density or viscosity
- Works in any orientation with a tuning fork of user-specified length
- Small connection thread from ¾" and flanges from DN 25 (ANSI 1")
- Pressures up to 64bar and 250 deg C temperatures
- High resistance materials and coatings
- Electronics are Self monitoring for damage, corrosion or heavy build up on forks
- Approved overfill device, "press to test" without raising the level, or removing the switch.

Measuring Principle

The tuning fork is energized by a piezo crystal and vibrates at its resonant frequency of approximately 380Hz. A second crystal detects this frequency, which is then passed to the integral electronics. If the Vibrofork tuning fork is covered by liquid, the resonant frequency is reduced. This change is detected by the integral electronics and converted into a switch signal. Build up, even between the forks of a viscous liquid present no problem.

Designed in reliability…on a Vibrofork the main piezo drive vibrating the tuning fork is screwed together, many other similar devices the piezo drive is glued, which can cause reliability problems that are exacerbated by heating and temperature shocks weakening the adhesion.

SPECIFICATION

GENERAL DESCRIPTION	Vibrating Fork Liquid Level Switch Piezo-electric self-validating failsafe mechanism, No floats, no padlocks	
APPLICATION	Overfill Prevention for All Bulk Liquid Storage Applications	
PERFORMANCE	Level Hysteresis Level Integration Time	± 1mm 0.5 seconds
ELECTRICAL	Electrical Safety	⟨Ex⟩ ATEX II 1G, 1/2G, 2G EEx ia IIC T6 (t_{amb} = -40°C to +70°C) ⟨Ex⟩ ATEX II 1/2G, 2G EEx d ia IIC T6) (t_{amb} = -40°C to +70°C)
	Other Approvals	Overfill protection acc. to WHG Ship approvals
	Power Supply	for connection to an amplifier acc. to NAMUR IEC 60947-5-6, ca. 8,2 V Open-circuit voltage U0 approx. 8.2 V Short-circuit current IU approx. 8.2 mA
COMMUNICATION & CONTROL SYSTEMS	Necessary processing system	NAMUR processing system acc. to IEC 60947-5-6 (EN 50 227/DIN 19234)
	Modes (NAMUR output adjustable to falling or rising characteristics)	- min. rising characteristics (High current when immersed) - max. falling characteristics (Low current when immersed)
	Validation	Integral press-to-test button simulates device activation back to control room.
PHYSICAL	Exterior Protection	Standard: Aluminium, powder -coated Options : Plastic, Stainless Steel 316L
	Environmental Protection	IP 66/IP 67
	Tank Operating Temperature	-50°C to +250°C
	Working Pressure	-1 to 64 bar
	Weight	Aluminium Housing 1.2kg
	Process Connection	Thread : G¾A, ¾ NPT, G1A, 1 NPT Flanges : DIN from DN 25, ANSI from 1" and upward

Motherwell Tank Gauging
St Michaels Road
Lea Green Ind Est
St Helens
Merseyside
England WA9 4WZ

Tel : + 44 1744 815211
Fax : +44 1744 814497

sales@motherwelltankgauging.co.uk
www.motherwelltankgauging.co.uk

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