



"Setting The Standard For Supplier Excellence"

VibraFork™ Vibratory Type Point Level Sensor For Liquids

- ▼ Vibrating Fork Design for Liquids and Slurries
- ▼ Easy Setup – No Calibration
- ▼ Immune to External Vibration
- ▼ Space-Saving Compact Version
- ▼ Variety of Outputs and Connections
- ▼ Variety of Probe Lengths



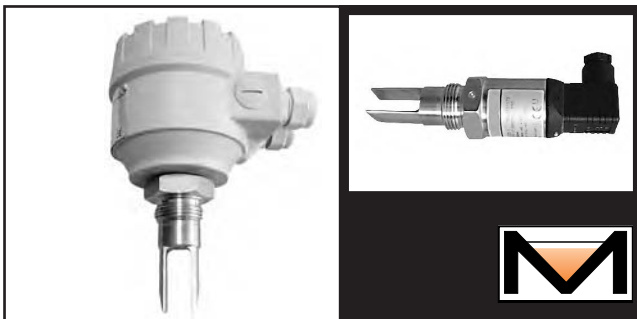


- ▼ **Multi-Purpose Level Sensor Used For Most Liquids And Slurries**
- ▼ **High Excitation Frequency And Unique Fork Design Provides Excellent Immunity To External Vibration**
- ▼ **“Standard” Version With Plastic Or Aluminum Enclosure**
- ▼ **“Compact” Version With “SHORT” Fork Is Excellent For Tight Spaces**
- ▼ **“SHORT”, Standard And Extended Probe Lengths Available**

The **VibraFork™** vibrating fork sensor provides reliable point level sensing in a wide variety of liquid applications in virtually any industry. The vibrating probe principle overcomes typical application difficulties associated with changes in material, electrical dielectric constant, temperature or humidity while providing reliable solid state electronic circuitry that requires no calibration.

The **VibraFork** line of sensors is offered in two versions, “Standard” and “Compact.” The “Standard” version is provided with a traditional instrument housing (plastic or aluminum) and provides local indication using a high-intensity bi-color LED and a traditional relay output. The “Compact” version is provided with a compact stainless steel housing with a small local LED and offers a choice of solid state PNP/NPN or 2-wire AC outputs.

The probe configurations available include the standard probe (4.9 in/125 mm), “SHORT” probe (2.7 in/69 mm) or pipe extension probe.



LEFT: “Standard” Housing (Plastic) with “SHORT” Probe
RIGHT: “Compact” Version with “SHORT” Probe

PRINCIPLE OF OPERATION

The **VibraFork™** line of point level sensors is a mechanical resonance system that is excited and kept in resonance by the sensor’s electronic circuitry. The process medium, when it reaches the tines of the vibrating fork, modifies the vibration. An electronic circuit within the sensor assembly senses this change in frequency and activates the sensor’s output.

Combining frequency and amplitude shift sensing methods, along with its unique probe design, the **VibraFork** point level sensor provides unparalleled reliability and value.

APPLICATIONS

The **VibraFork™** vibrating fork sensor provides reliable point level sensing in a wide variety of liquid applications. The vibrating fork principle requires no calibration and is easily setup. Extreme applications such as highly viscous fluids, vibrating vessels and turbulent liquid surfaces are routine applications. The **VibraFork** can be used in almost all liquid media like non-explosive liquids, aggressive liquids (acids, solvents) and the unit is not affected by foam, turbulence and gas content.



TYPICAL APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO:

Chemicals	Water/Wastewater
Food Ingredients	Oils
Pharmaceuticals	Beverages
Liquid Storage	Mixing Tanks

FEATURES

HIGH EXCITATION FREQUENCY

The **VibraFork™** point level sensor operates at 2KHz which is higher than most every competitive unit. This, in combination with the unique probe design, allows the **VibraFork** to provide a high degree of immunity to external vibration.

“COMPACT” VERSION

Tight spaces can be handle by using the “Compact” version. This unit can be equipped with a solid state PNP/NPN or 2-



wire AC output for use with an external relay. This version is extremely suitable where the available space for the sensor is limited.

CHOICE OF HOUSING MATERIALS

The “Standard” version of the **VibraFork** can be provided with either a plastic or cast-aluminum housing. The plastic enclosure is available at a slightly lower cost for applications not requiring a rugged metal housing.

CHOICE OF PROBE CONFIGURATIONS

All **VibraFork** units are available with either the standard or “SHORT” length probes. In addition, for top mounted applications the **VibraFork** can be provided with a pipe extension where the overall length can be up to 3.3 feet/1.0 m (In Europe: 3.0m).

UNIVERSAL POWER SUPPLY

Each “Standard” housing version of the **VibraFork** level sensor can be powered by either 20-255 VAC or 20-60 VDC. The “Compact” version provided with 2-wire AC output uses 20-255 VAC while the PNP/NPN solid-state output unit requires 12-55 VDC power.

SELECTABLE FAIL-SAFE MODE

The **VibraFork** is selectable for high or low fail-safe mode. This allows the user to set the output state upon alarm activation and power failure.

CHOICE OF MOUNTING CONNECTIONS

All **VibraFork** units can be provided with a 1" NPT, 1" BSP, DN50PN40 flange or 2" RF ANSI600 flange connection.

CHOICE OF OUTPUTS

The “Standard” housing versions can be provided with either 1 or 2 SPDT relays. The “Compact” versions can be provided with 2-wire AC or PNP/NPN outputs.

LOCAL INDICATION

Each **VibraFork** sensor includes a bi-color LED to indicate power and material absence/presence.



AVAILABLE CONFIGURATIONS

“STANDARD” HOUSING VERSION

The “Standard” housing version uses a traditional enclosure (plastic or powder coated die-cast aluminum) to house the unit’s electronics module. This unit can be used for either high or low level applications.

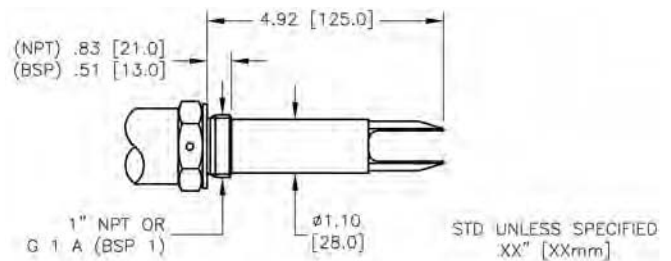
“COMPACT” HOUSING VERSION

The “Compact” unit is used in applications where space is at a premium. The unit is enclosed in a stainless steel tube housing of approximately 1.6 inches (40 mm) diameter. This unit can be used for either high or low level applications.

STANDARD PROBE

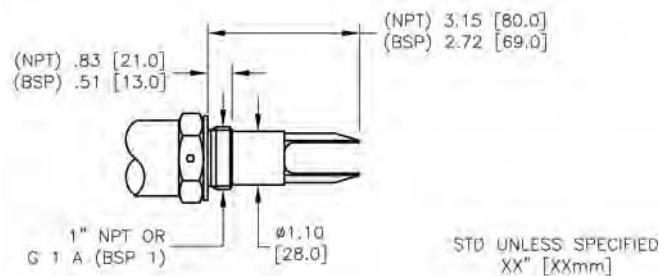
The probe configurations available for the **VibraFork™** level sensor are all constructed of 316Ti SS suitable for use in most applications. The standard probe has an overall length of 4.9 inches (125 mm). The standard probe configuration is suitable for top and side mount applications. All probe configurations mount to the vessel using a 1" NPT, 1" BSP, DN50PN40 flange or 2" RF ANSI600 flange connection.

DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETER EQUIVALENT IN BRACKETS



“SHORT” PROBE

The insertion length of the “SHORT” probe is only 2.7 inches (69 mm), making the “SHORT” probe ideal for small tanks, liquid flow/no-flow detection in pipes or anywhere a very short insertion length is required (typically side mounted).



SPECIFICATIONS

GENERAL

Probe Material:	316Ti stainless steel (DIN 1.4571)
Process Conn. Material:	316Ti stainless steel (DIN 1.4571)
Extension Material:	316Ti stainless steel (DIN 1.4571)
Ambient Temp Limits:	-22° to 158° F (-30° to 70° C)
*Process Temp Limits:	-40° to 266° F (-40° to 130° C)
Maximum Pressure:	580 psi (40 bar) for threaded process connection (Refer to ordering information for flange rating, if applicable)
Sensitivity (Min density):	0.7kg/dm ³ ; 0.7SG
Liquid Viscosity Limit:	10,000 cSt (10,000 mm ² /s)
Time Delay (Not adj):	On-Delay (when immersed): 0.5 sec max Off-Delay (when free of material): 2 sec typical when viscosity is ≤ 2,000 cSt (2,000 mm ² /s)
Local Indicator:	Bi-color LED; Red indicates de-energized relay and output "on"; Green indicates energized relay and output "off"; No LED illuminated indicates improper supply voltage or damaged circuitry

"STANDARD" VERSION (RELAY OUTPUT)

Power Requirements:	20-255VAC 50/60Hz; 20-60VDC
Power Consumption:	AC: 1.2-17VA DC: <0.6W
Fail-Safe Mode:	High/Low Switch Selectable
Output:	One or Two Relays; SPDT; Relay 1: 8A @ 250VAC; Relay 2 (if supplied): 6A @ 250VAC
Conduit Connections:	Two (2) 1/2" NPT and Two (2) M20 x 1.5
Housing:	Powder coated die-cast aluminum or Plastic (PBT/Polybutylene Terephthalate fiberglass reinforced); NEMA 6, IP67
Mounting Connection:	1" NPT, G 1 A (BSP 1), DN50PN40 SS flange or 2" RF ANSI600 SS flange
Weight:	Alum: 2.86lbs + 0.06lbs per inch extension (1.3kg + 0.1kg/100mm) Plastic: 2.1lbs + 0.06lbs per inch extension (0.95kg + 0.1kg/100mm)

"COMPACT" VERSION (PNP/NPN OUTPUT)

Power Requirements:	12-55VDC
Power Consumption:	<0.6W
Fail-Safe Mode:	High/Low Switch Selectable
Output:	PNP or NPN transistor (selectable)
Output Protection:	Reverse polarity, over-current and overload protection
Current Load:	I _{max} = 350mA DC/U _{max} = 55VDC
Voltage Drop:	"Switched-on" state: <4.5V
Residual Current:	"Switched-off" state: < 100µA
Electrical Connection:	Cord connector, PG 11
Housing:	Stainless Steel 316Ti (DIN 1.4571); NEMA 4, IP65
Mounting Connection:	1" NPT, G 1 A (BSP 1), DN50PN40 SS flange or 2" RF ANSI600 SS flange
Weight:	1.1 lbs + 0.06 lbs per inch extension (0.5 kg + 0.1 kg/100 mm)

"COMPACT" VERSION (2-WIRE AC)

Power Requirements:	20-255VAC 50/60Hz
Power Consumption:	Depending Upon Load
Fail-Safe Mode:	High/Low Switch Selectable
Output:	2-wire AC, in serial connection with the load
Current Load:	Max Continuous: 350mA (AC13) Min Continuous: 10mA @ 255VAC; 25mA @ 24VAC Max Impulse: 1.5A for 40ms
Voltage Drop:	"Switched-on" state: <10.5V
Residual Current:	"Switched-off" state: < 6mA
Electrical Connection:	Cord connector, PG 11
Housing:	Stainless Steel 316Ti (DIN 1.4571); NEMA 4, IP65
Mounting Connection:	1" NPT, G 1 A (BSP 1), DN50PN40 SS flange or 2" RF ANSI600 SS flange
Weight:	1.1lbs + 0.06lbs per inch extension (0.5kg + 0.1kg/100mm)



WARRANTY

Monitor Technologies LLC warrants each **VibraFork™** it manufactures to be free from defects in material and workmanship under normal use and service for two (2) years from the date of purchase. The purchaser must notify Monitor of any defects within the warranty period, return the product intact, and prepay transportation charges. The obligation of Monitor Technologies LLC under this warranty is limited to repair or replacement at its factory. This warranty does not apply to any product which is repaired or altered outside of Monitor Technologies' factory, or which has been subject to misuse, negligence, accident, incorrect wiring by others, or improper installation. Monitor Technologies LLC reserves the right to change the design and/or specifications without prior notice.



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