

DATASHEET

**HTF1740**

**HTF1741**

**H SERIES  
SENSORS**



## Highlights

- Ideal for monitoring high level conditions of liquids, fine grained solids, and powders
- Unaffected by turbulence, flow, foam/bubbles, vibration, liquid properties, product variations, coating products, and solids content
- Fork material: 316 or 316L stainless steel
- Process temperature: -40 to 130 °C (-40 to 266 °F)
- Max pressure: 5" to 12" 2000 PSI (140 BAR) / 13" and up 600 PSI (40 BAR)
- 5" to 118" length option in 1" increments
- Signal Output Options:  
Relay SPDT/Single Pole Double Throw (NO and NC) or SSR MOSFET (PNP/NPN)
- Fitting options: NPT, BSP, 150 and 300 lbs
- Selectable alarm high or low option
- Sensitivity adjustment option
- Support for wide power supply range
- No calibration required
- NEMA 4X, IP66, Explosion-proof
- Magnetic Switch Kit available to verify operation, 1/2" NPT Direct-Mount



## Cost-Effective Point Level Detection Solution

### Low Maintenance, High Reliability

The Tuning Fork Level Switches by OleumTech are part of the H Series line of high quality instruments delivering unrivaled performance, reliability, and accuracy in the most demanding environments, including hazardous locations.

These instruments are designed based on the tuning fork principle for providing point level detection for alarm, monitoring, and control applications. When in air, the tuning fork vibrates at its natural frequency, but when immersed in a particular medium, the frequency drops and provides an output state change.

The H Series Tuning Forks provide exceptional performance for overflow (high) or dry run (low) detection of liquids such as oil, petroleum, corrosive liquid, and water as well as many other mediums such as powders, granular plastics, and gravel. You can select the alarm mode to high or low level detection on the device.

### Designed for Hazardous Locations

The HTF1740 and HTF1741 provide local LED indication for facilitating the installation process and running diagnostics. The Red LED is for power while the Green LED provides alarm indication. When the Green LED is on, the Tuning Fork is in its normal state and the signal output is energized. When the Green LED is off, the Tuning Fork is in its alarm state and the signal output is de-energized.

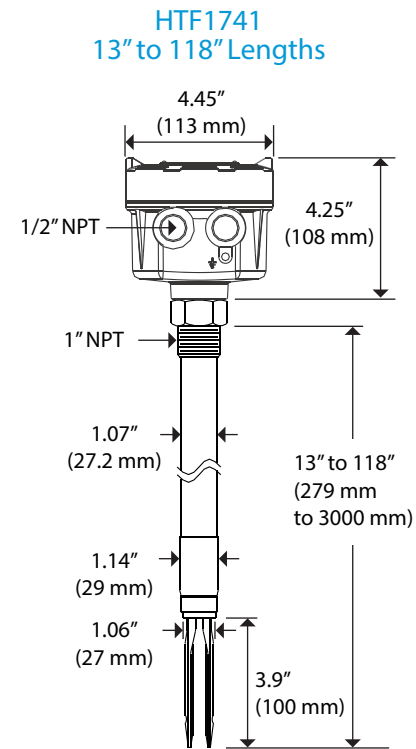
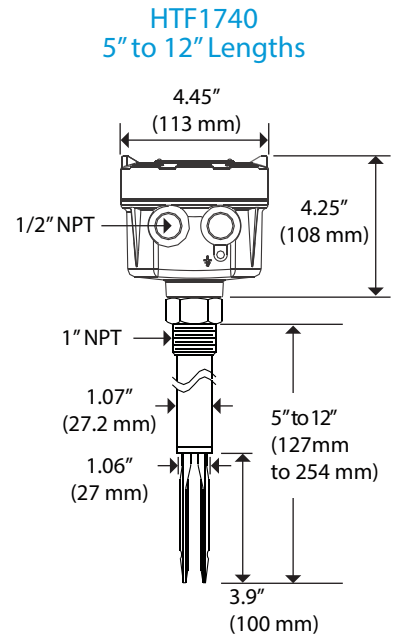
The Tuning Fork provides adjustable sensitivity controls. The default setting is set to high (max), with the switching point set at 0.6" (15 mm) from the top of the tuning fork. The adjustment dial provides an approximate 2.4" (60 mm) of range.

The H Series Tuning Forks are Explosion-Proof, certified for use in hazardous locations. The HTF1740 can be ordered from 5" to 12" range from the thread to the tip of the fork while the HTF1741 is offered from 13" to 118" option in 1" increments.

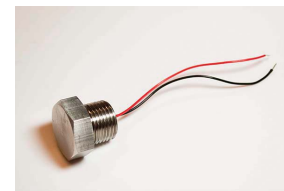
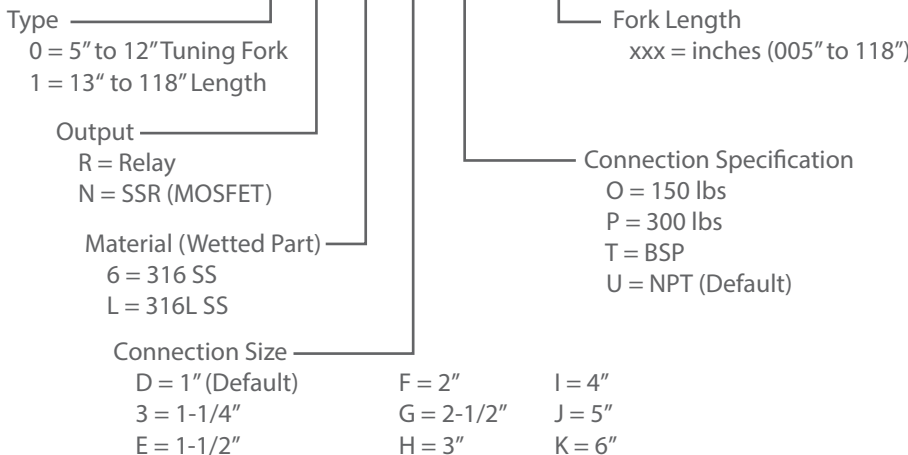
### Technical Specifications

HARDWARE FEATURES	
Device Functionality	· Point Level Detection Switch using Vibrating Tuning Fork Technology
Interface	· Relay (Normally Open and Normally Closed) or SSR MOSFET (PNP/NPN)
CERTIFICATION & COMPLIANCE	
Safety	· Explosion-proof for Use in Hazardous Environments
	· IECEx TUR 19.0037
	· Ex d IIB T4 or T5 or T6 Gb
	· Ex tb IIIC T130 °C or T95 °C or T80 °C Db
MECHANICAL SPECIFICATIONS	
Dimensions (Housing)	· 4.45" (W) x 4.25" (H) x 4.45" (D) / 113 mm (W) x 108 mm (H) x 113 mm (D)
Tuning Fork Length (Thread to Tip)	· HTF1740: 5" to 12" (127-305 mm) / HTF1741: 13" to 118" (330 to 3000 mm)
Package Dimensions	· 18" Length: 20.1" (W) x 6.7" (H) x 6.7" (D) / 51 cm (W) x 17 cm (H) x 17 cm (D)
Package Weight	· 18" Length: 8 lbs. / 3.6 kg, Please Ask an OleumTech Sales Representative for More Information
Ports	· Two 1/2" NPT
Connection Fitting (Standard)	· 1" NPT
Connection Fitting Options	· NPT, BSP, 150 lbs, 300 lbs (1", 1.25", 1.5", 2", 2.5", 3", 4", 5", 6")
Enclosure Casing Material	· Type 4X Aluminum; IP66
Fork Trigger Point	· Default: 0.91" (23 mm) From Tip of the Fork (Maximum Sensitivity: 0.59" (15 mm) From Tip of the Fork)
Tuning Fork Material	· Stainless Steel 316 or 316L Option
Max. Vertical Load on Rod.	· 177 in/lb (20 Nm)
Process Pressure Range	· 5" to 12": -1 (-0.07 BAR) to 2000 PSI (140 BAR) / 12" and Up: -1 (-0.07 BAR) to 600 PSI (40 BAR)
Min. Material Density Sensed	· Solid: $\geq 0.04 \text{ oz/in}^3$ (0.07g/cm <sup>3</sup> ), Liquid: $\geq 0.04 \text{ oz/in}^3$ (0.7g/cm <sup>3</sup> ), Viscosity: 1~10000 cst
Time Delay (Debounce)	· 0.6 Second / Operation: 1-3 Seconds / Reset
Vibrating Frequency	· 350-370 Hz
Selectable Alarm Mode	· High (Overflow) or Low (Dry Run)
Selectable Sensitivity	· Low to High (Closer to Tip of the Fork)
LED Status Indicators	· Red (Power): On = Normal, Off = Power Failure; Green (Signal): On = Normal State, Off = Alarm State
Fork Operation Test Points	· Short RT1 and RT2 Wiring Terminals to Test Tuning Fork Operation
ELECTRICAL SPECIFICATIONS	
Signal Output	· Relay Contact (SPDT): 3 A / 250 Vac / 250 Vdc; SSR MOSFET (PNP/NPN): 400 mA / 60 Vac / 60 Vdc
Output Modes	· Relay Type: Normally Open and Normally Closed; SSR Type: PNP or NPN
Power Supply	· 20-250 Vac 50/60Hz Vac or 20-250 Vdc, Fail Under 18 Vac/Vdc, 50/60 Hz
Power Consumption	· 5 VA (AC) or 2.5 W (DC) Max., 120 Vac/30 mA or 24 Vdc/75 mA Normal Operation
GENERAL SPECIFICATIONS	
Operating Conditions	· Tuning Fork: Process Temperature: -40 to 130 °C (-40 to 266 °F)
	· Housing: Ambient Temperature: -40 to 70 °C (-40 to 158 °F)
	· Operating Humidity: 20 to 80 %, Non-Condensing
Warranty	· 2-Year Parts and Labor
ORDERING INFORMATION	
Model Numbers	· HTF1740 (5" to 12" Tuning Fork Length Option in 1" Increments) · HTF1741 (13" to 118" Tuning Fork Length Option in 1" Increments)
Accessory	· Magnetic Switch Kit (1/2" NPT Direct-Mount), SX1000-MS1

### Dimensions



**H T F 1 7 4 0 R 6 D U X X X**



Magnetic Switch Kit  
SX1000-MS1

