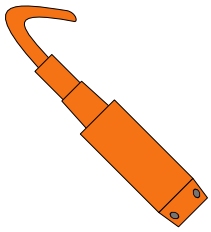


TLH: (Loop Powered)
Hydrostatic Two Wire Level Transmitter

Trumen®
sensing matters

Compact Size

Durable Construction

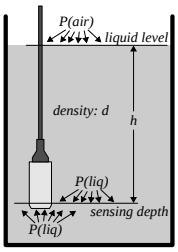
Trusted Principle of Operation

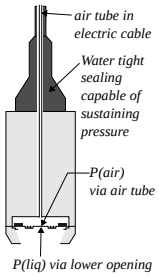
Liquid Inventory Assessment

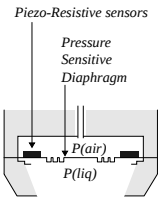
Easy Installation

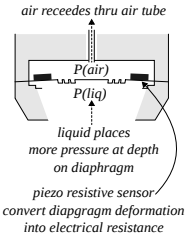
Order Code

Operating Principle









Pressure *P(liq)* on any surface and container walls at depth h, by the liquid of desnity d, is:

$$P(liq) = d \times g \times h + P(air)$$

where *P(air)* is the air pressure and *g* is the acceleration due to gravity (constant for a given place) at the place of liquid container. Replacing constants the equation becomes:

$$P(liq) - P(air) = K \times h$$

in short: Pressure difference represents liquid level. One convenient unit that clubs pressure with level is mH_2O (pressure felt at depth in meters while being immersed in water)

Trumen hydrostatic pressure transmitter utilizes pressure exerted by liquid *P(liq)* and substract it by air pressure *P(air)* using a single pressure sensitive diaphragm and air-vent in connection cable.

As Trumen hydrostatic pressure transducer is immersed deeper in the liquid, the *P(liq)* becomes higher than *P(air)* and the diphragm minutely deforms.

This diaphragm deformation can't be seen visibly, but it is caught by piezo-resistive sensors secured on the sensitive diaphragm.

Thus pressure exerted by liquid is sensed by Trumen hydrostatic sensor which is directly denotes the depth from the surface of liquid.

Specifications

Sensor Supply:	14 to 36VDC
Output:	4-20mA / 4-20mA HART / RS 485
Load:	250 Ohm @14V to 1100 Ohm @ 36V
Pressure Range	B1: 0...1mH_2O B2: 0...2mH_2O B3: 0...3mH_2O B4: 0...4mH_2O B5. 0...5mH_2O B6: 0...6mH_2O B7: 0...7mH_2O B8: 0...8mH_2O B9: 0...9mH_2O B10: 0...10mH_2O B11: 0...11mH_2O B12: 0...12mH_2O B13: 0...13mH_2O B14: 0...14mH_2O B15: 0...15mH_2O B20: 0...20mH_2O B25: 0...25mH_2O
Accuracy	± 0.25% (standard) ± 0.5% minimum % of Full Scale
Long-Term Stability:	< ± 0.5% of Full Scale per Year
Response Time:	<2 mili seconds
Temperature	
1. Storage	-40°C to +100°C
2. Usable	0°C to +80°C
3. Compensated	0°C to +50°C
Sense Diaphragm Material	SS316L
Wetted Sensor Material	SS316 / SS316L
Cable Insulation	Polycarbonate/Polyurathene
Submersible Protection Class	IP68
Protection Head	
1. Material	Aluminum Pressure Die-Cast
2. Paint	Epoxy Polyurathene Coated
3. Protection Class	IP-68
4. Process Connection	Threaded: NPT/BSP 1” to 2” Flanged: ANSI/JIS/DIN/ASA

* Specifications are subject to change without prior notice

TLH	Hydrostatic Level Transmitter
Px	Protection Head Process Connection Type (PFL: Flanged Type – description of flange - FL -at the end of order code) (PB1: BSP 1”, PB2: BSP 1 ½”, PB4: BSP 1 ¼”, PB5: BSP 2”) (PN1: NPT 1”, PN2: NPT 1 ½”, PN4: NPT 1 ¼”, PN5: NPT 2”)
Cx	Protection Head Process Connection Material (CM: Mild Steel, C2: SS-202, C4: SS-304, C6: SS-316, CL: SS-316L)
Dxx	Output Options (DLP: DC Loop Powered 4-20mA, DLH: DC Loop Powered 4-20mA HART, DMB: DC Powered ModBus Over RS485)
Bxxx	Pressure Range in Meters
Lxxxxxx	Length of entire cable including pressure range in mm
FLxx	Flange type and bore size specified for ASA/ANSI/JIS/DIN/Custom