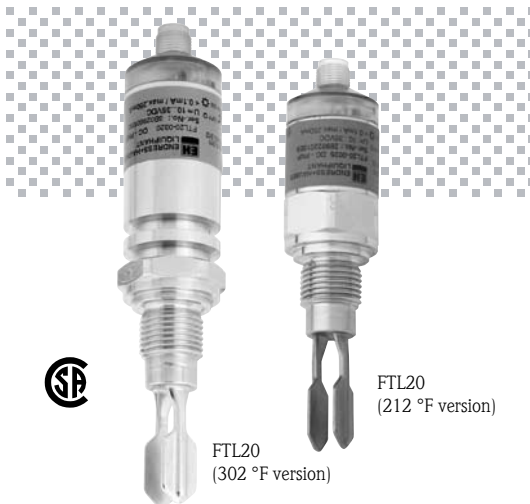


# Compact vibration limit switch for liquids

## Liquiphant T FTL20

**E-direct**

www.e-direct.us



- Reliable tuning fork technology
- 1/2", 3/4" NPT process connection
- Compact size for simple installation in places difficult to access
- Rugged stainless steel housing
- External test using magnet without removal
- AC, DC, or AS-i bus outputs

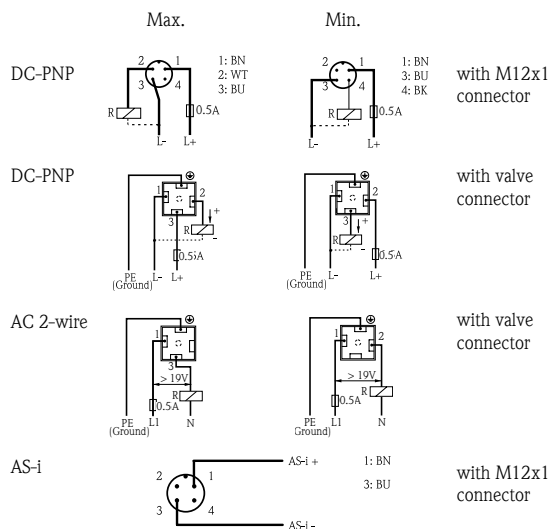
### Application

Liquiphant T FTL20 is a universal level limit switch, for use in cooling and lubricant tanks, in piping as pump protection, in cleaning and filtering plants and generally in any tank containing liquids. The device is used wherever float switches, conductive, capacitive and optical sensors were previously used with limited success. It is also designed for applications where these measuring methods are not suitable due to conductivity, deposits, turbulence, flow and air bubbles in the liquid.

### Measurement principle

The symmetrical vibrating stainless steel (316L) fork is excited to its resonant frequency which changes when the fork is immersed in liquid. The change is detected by the electronics, which actuate an electronic switch output. The FTL20 can be directly connected to AS-i bus or programmable logic controllers (PLC).

### Electrical connection

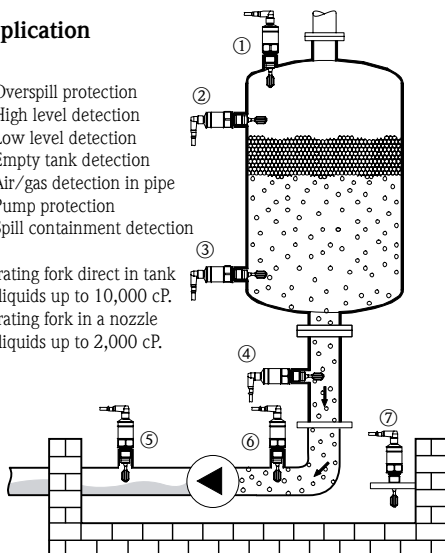


<b>Product:</b> all kinds of liquids	<b>Mounting:</b> vessels or pipes from 1"
<b>Product density:</b> ≥ 0.7 SGU	<b>Product temperature:</b> -40 to +212 °F/+302 °F
<b>Product viscosity:</b> up to 10,000 cP	<b>Process pressure:</b> max. 580 psig

### Application

- ① Overspill protection
- ② High level detection
- ③ Low level detection
- ④ Empty tank detection
- ⑤ Air/gas detection in pipe
- ⑥ Pump protection
- ⑦ Spill containment detection

Vibrating fork direct in tank for liquids up to 10,000 cP.  
Vibrating fork in a nozzle for liquids up to 2,000 cP.



Technical Datasheet  
TD 019E/US/ae/10.09  
US/INDD CS

**Endress+Hauser**

People for Process Automation

# Liquiphant T FTL20

## Technical data

### Output AC version

- Power supply 19 to 253 V AC, 50/60 Hz
- Connectable load 250 mA (load is checked automatically when connected)
- Current consumption max. 3.8 mA
- Electrical connection Valve connector

### Output DC version

- Power supply 10 to 35 V DC
- Connectable load 250 mA (overload resistant)
- Current consumption max. 15 mA
- Electrical connection Valve connector or M12x1 (order cable separately)

### Output AS-i bus version

- Power supply 26 to 32 V DC
- Connectable load to EN 50295
- Current consumption max. 25 mA
- Electrical connection M12x1 (order cable separately)

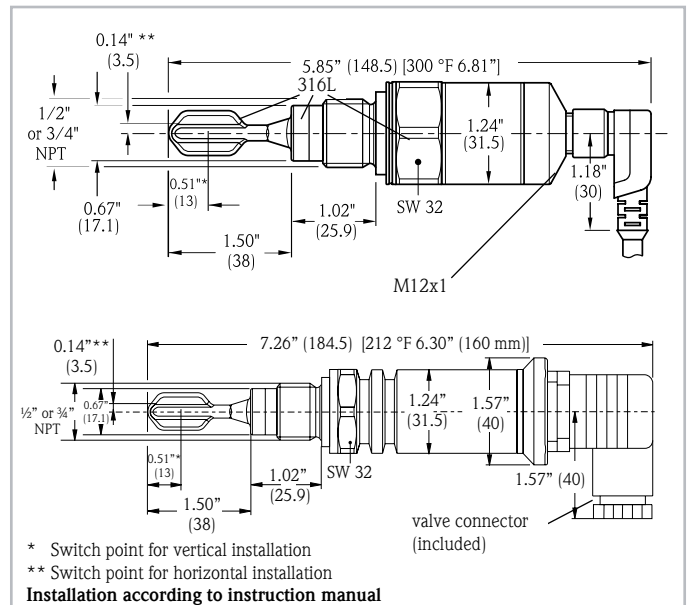
### Output general

- Switching time approx. 0.5 s when covered  
approx. 1.0 s when free
- Hysteresis approx. .078" with vertical mounting
- Process connection 1/2" NPT, 3/4" NPT

### Operating conditions

- Orientation as required by application
  - Switch point vertical installation: 0.51"  
horizontal installation: 0.14"
  - Ambient temperature -40 to +158 °F, AS-i bus -13 to +158 °F
  - Temperature of product -40 to +212 °F, optional +300 °F
- \*1 15 ft. cable and M12x1 plug please order separately  
\* please add thread code to Order no.:  
2 = 1/2" NPT thread; 3 = 3/4" NPT thread

## Dimensions in inches (mm) and Materials



- Operating pressure -14.5 psig to +580 psig
- Storage temperature -40 to +185 °F
- Climatic protection IEC 68, part 2-38
- Ingress protection NEMA 4; w/connector M12x1: NEMA 4X
- EMC Noise emission to EN 61326 Class B  
Noise emission to EN 61326 Class B
- Density of product min. 0.7 SGU
- Viscosity of product up to 10,000 cP

### Approvals

- Certificates CSA and CSA-US to CAN/CSA-C22.2 No. 1010.1-92 and UL 3121-1

Many other models, versions and options are available. Please contact Endress+Hauser for more information.

Product	Version	Order no.	Price/piece in \$			we hereby order:	total price:
			1 to 5	6 to 15	16 to 35		
FTL20/AC	Standard, with valve connector, 212 °F	FTL20-3__*14	\$136.00	\$123.00	\$111.00	pcs	\$
	with valve connector, 300 °F	FTL20-3__*1C	\$155.00	\$140.00	\$126.00	pcs	\$
FTL20/DC	Standard, with valve connector, 212 °F	FTL20-3__*24	\$136.00	\$123.00	\$111.00	pcs	\$
	with valve connector, 300 °F	FTL20-3__*2C	\$155.00	\$140.00	\$126.00	pcs	\$
	M12x1 connector, 212 °F	FTL20-3__*25	\$136.00	\$123.00	\$111.00	pcs	\$
	M12x1 connector, 300 °F	FTL20-3__*2D	\$155.00	\$140.00	\$126.00	pcs	\$
FTL20/AS-i	M12x1 connector, ASI-bus, 212 °F	FTL20-3__*35	\$165.00	\$149.00	\$134.00	pcs	\$
	M12x1 connector, ASI-bus, 300 °F	FTL20-3__*3D	\$184.00	\$166.00	\$150.00	pcs	\$
Accessories	Installation Socket Wrench (AF32)	52010156		\$11.50		pcs	\$
	Cable, 15 ft. PVC w/M12x1 connector plug	52010285		\$11.50		pcs	\$

Net excluding cost of shipping and taxes.  
Acceptance per our Standard Terms and Conditions (find at [www.e-direct.us](http://www.e-direct.us)).

**Total price:**  
FOB Greenwood, IN; shipped pre-paid; shipping charges and applicable taxes added to invoice. \$ \_\_\_\_\_

E-direct catalog (free)

Shipping method  Ground  Priority One Day  Priority Two Day

**E-direct**

E-direct  
Endress+Hauser, Inc.  
2350 Endress Place  
Greenwood, IN 46143

(For customers in the USA only)  
Online Shop [www.e-direct.us](http://www.e-direct.us)  
Order: by phone 888-EH DIRECT (343-4732)  
by fax 800-321-7754  
For special requests, e-mail us: [e-direct@us.endress.com](mailto:e-direct@us.endress.com)

**Warranty** Should an instrument fail during the 1 year warranty period, a replacement unit will be provided.  
**Delivery** Shipment from receipt of order for quantities 1-3 within 2 business days.

**Endress+Hauser**

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