

Point level switch for liquids in the food and beverage industry

Liquipoint FTW23



€ 114.-
11-35 pcs.

 IO-Link

 Complete product information:
www.e-direct.endress.com/ftw23

- Function testing of switch outputs with test magnet
- Separate configuration of two switching thresholds, e.g. medium detection and medium differentiation
- 3-A and EHEDG certificates

Specs at a glance:

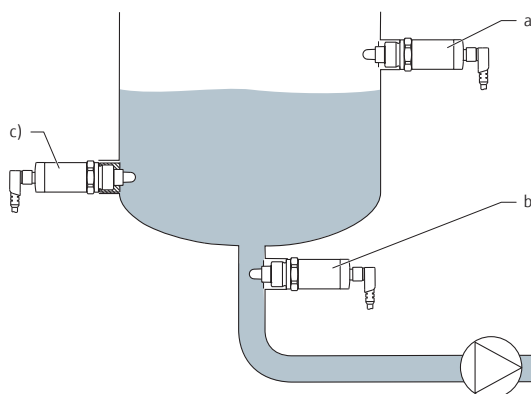
- **Product:**
Water-based medium
- **Installation:**
Vessels and pipes
- **Process temperature range:**
-20 to +100 °C (-4 to +212 °F)
(For 1 hour: +135 °C (+275 °F))
- **Process pressure range:**
-1 to +16 bar
(-14.5 to +232 psi)

Application The Liquipoint FTW23 is a point level switch for water-based liquids. It is used preferably in storage tanks, mixing vessels and pipes. Developed and built for the food and beverage industry, the Liquipoint FTW23 meets international hygienic requirements.

The Liquipoint FTW23 can be used permanently in process temperatures up to 100 °C (212 °F) and in cleaning and sterilization processes to 135 °C (275 °F) for 60 minutes.

Function The capacitance at the tip of the sensor, and therefore the dielectric value of the medium, is determined using an electrical field. Given that the dielectric value of air and a water-based liquid differ, the Liquipoint FTW23 can differentiate between the two states, i.e. covered and uncovered.

Application example



The measuring system consists of a Liquipoint FTW23 point level switch, e.g. for connection to programmable logic controllers (PLC).

- a) Overfill protection or upper level detection (MAX)
- b) Pump dry running protection (MIN)
- c) Lower level detection (MIN)

Technical data

Output

Switch output	3-wire DC-PNP: – 2 DC-PNP outputs, switched using XOR operation – 200 mA connectable load (short-circuit proof) Devices with IO-Link: – 2 DC-PNP outputs, freely configurable – 1 switch output active: 200 mA connectable load (short-circuit proof) – Both switch outputs active: connectable load of 105 mA each (short-circuit proof)
Residual voltage	<3 V
Residual current	<100 µA
Supply voltage	10 to 30 V DC
Power consumption	<1.2 W (at max. load: 200 mA)
Current consumption	<40 mA
Cable specification	IEC 60947-5-2
Connecting cable length	– max. 25 Ω/core, total capacity < 100 nF – IO-Link communication: < 10 nF

Performance characteristics

Reference operating conditions	horizontal orientation: – Ambient temperature: 20 °C (68 °F) ±5 °C – Medium temperature: 20 °C (68 °F) ±5 °C – Process pressure: 1 bar (14.5 psi) – Medium: water
Switching accuracy	±2 mm (0.08 in) in accordance with DIN 61298-2
Hysteresis	Typically ±1 mm (0.04 in)
Non-repeatability	±1 mm (0.04 in) in accordance with DIN 61298-2
Switching delay	0.5 s when sensor is covered 1.0 s when sensor is uncovered
Switch-on delay	<2 s (previously not through-connected)
Orientation	any position

Environment

Ambient temperature range	–20 to +70 °C (–4 to +158 °F) (at $T_{\text{Process}} \leq 80 \text{ °C (176 °F)}$), –20 to +35 °C (–4 to +95 °F) (at $T_{\text{Process}} = 135 \text{ °C (275 °F)}$)
Storage temperature	–40 to +85 °C (–40 to +185 °F)
Climate class	DIN EN 60068-2-38/IEC 68-2-38: test Z/AD
Degree of protection	– IP65/67 NEMA Type 4X Enclosure (M12 connector for plastic housing cover) – IP66/68/69K NEMA Type 4X/6P Enclosure (M12 connector for metal housing cover)
Short-circuit protection	– Overload protection/short-circuit protection at $I > 200 \text{ mA}$ – Device with IO-Link: 105 mA per output if both switch outputs are active

Process

Process temperature range	–20 to +100 °C (–4 to +212 °F) (For 1 hour: +135 °C (+275 °F))
Process pressure range	–1 to +16 bar (–14.5 to +232 psi)
Process fluid	– Water-based media with a dielectric constant (DC) > 20 (default) – Device with IO-Link communication: adjustment up to DC > 1.5 via the IO-Link interface for water-, alcohol- and oil-based liquids or powdered products

Mechanical construction

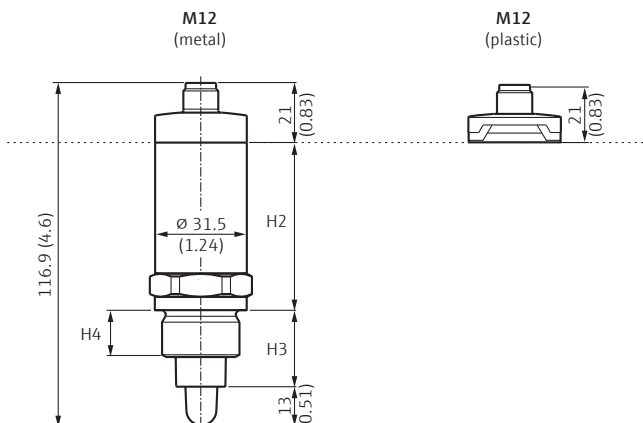
Weight	Max. 300 g (10.58 oz)
Materials in contact with process	– Sensor: 316L (1.4404), PEEK The material PEEK meets the requirements of EU 1935/2004, 10/2011, 2023/2006 and FDA 21 CFR 177.2415 – Process connection: 316L (1.4404 (1.4435))
Materials not in contact with process	Housing covers: – M12 metal: 316L (1.4404) – M12 plastic: PPSU; Design ring: PBT/PC Housing: 316L (1.4404)
Surface	$R_a \leq 0.76 \text{ µm (30 µin)}$

Approvals

Approval	CSA C/US General Purpose
Sanitary compatibility	3-A, EHEDG

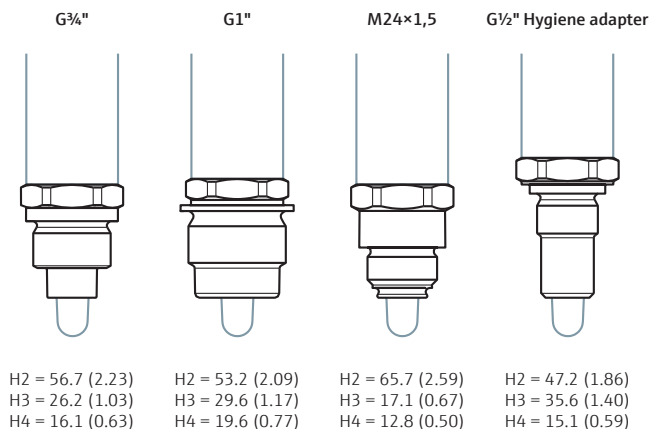
Dimensions in mm (inches)

Housing, electrical connection



Installation according to instruction manual.

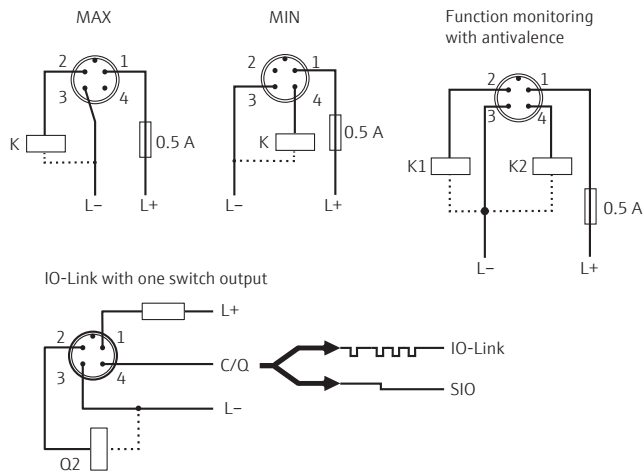
Process connections



Installation according to instruction manual.

Electrical connection

M12 connector



Price table

Power supply; output

Code	Version
4	10 to 30 V DC; 3-wire DC-PNP
7	IO-Link; DC-PNP

Liquipoint FTW23		Order no.	Price/pcs. in €		
Electrical connection	Process connection		1 to 3	4 to 10	11 to 35
M12 connector, IP65/67 NEMA Type 4 Enclosure	Thread ISO228 G1	FTW23-AA <input type="checkbox"/> MWSJ	151.-	136.-	124.-
	Thread ISO228 G½	FTW23-AA <input type="checkbox"/> MWVJ	146.-	132.-	120.-
	Thread ISO228 G¾	FTW23-AA <input type="checkbox"/> MW5J	139.-	125.-	114.-
	Thread M24	FTW23-AA <input type="checkbox"/> MX2J	146.-	132.-	120.-
M12 connector, IP66/68/69K NEMA Type 4/6P Enclosure	Thread ISO228 G1	FTW23-AA <input type="checkbox"/> NWSJ	174.-	157.-	143.-
	Thread ISO228 G½	FTW23-AA <input type="checkbox"/> N WVJ	170.-	153.-	139.-
	Thread ISO228 G¾	FTW23-AA <input type="checkbox"/> NW5J	163.-	146.-	133.-
	Thread M24	FTW23-AA <input type="checkbox"/> NX2J	170.-	153.-	139.-

* Please add code for power supply; output

Accessories	Order no.	Price/pcs. in €
Weld-in adapter G¾, d=50, 316L	71258355	26.52
Weld-in adapter G¾, d=29, 316L	71258357	26.75
Weld-in adapter G1, d=60, 316L	52001051	38.86
Weld-in adapter G1, d=53, 316L	71258358	38.87
5 m cable with M12×1 plug + integrated LED	52018763	20.81
5 m cable with M12×1 plug	52010285	7.25
Straight plug, without cable (self wired)	52006263	15.55
Test magnet	71267011	7.25

Prices are applicable for Latvia until 30/06/2020, in Euro per unit, net excluding value added tax (VAT), cost of packing and dispatch. Endress+Hauser retains the right to change or modify pricing at any time. The terms of sales and delivery of Endress+Hauser are applicable. Current prices and delivery times can be verified prior to ordering on www.e-direct.endress.com.

Complete product information:
www.e-direct.endress.com/ftw23

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your measuring point ...

