

# Liquipoint® FTW23 Capacitance Level Sensors



Part No. [FTW23-CA4MWVJ](#)

## Overview

The Endress+Hauser Liquipoint FTW23 is a capacitance point level switch for detection of water-based liquids. The versatile design of the Liquipoint makes it an ideal level switch for detecting the full, empty, refill, or point level status in vessels, tanks, or pipes containing mineral water, milk, and various milk products, soft drinks, beer, and other similar water-based liquids. The compact stainless-steel and plastic housing with integral G 1/2", 3/4", or 1" male thread process connection allows for easy installation and has an IP 65/67 protection rating. A more robust all stainless-steel housing version provides an IP 66/68/69 protection rating. Depending on the model, outputs include DC-PNP switches and IO-Link communication via an M12 quick disconnect

electrical connector. Factory configured to meet most applications, individual adjustments for different liquids are not needed. Versions with IO-Link communication capability can be configured with two separate switching thresholds for medium detection and differentiation; and can also be adjusted to work with alcohol- and oil-based liquids, or even powders. Color signal LEDs are provided for function verification (not on IP69 rated versions). Liquipoint FTW23 level switches are FDA compliant and marked with the 3-A symbol (except versions with G 1/2" threads) for use in food and beverage industry hygienic applications and can be cleaned and sterilized in place (CIP/SIP) when installed in appropriate hygienic fittings.

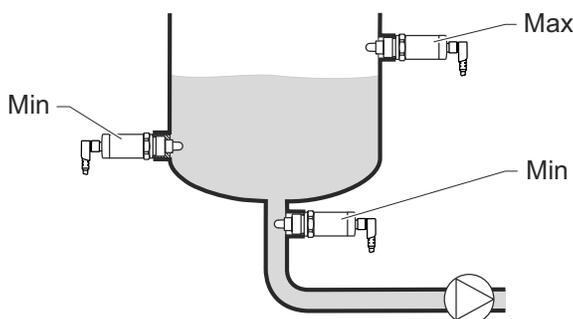
## Features

- Capacitance point level switch for detection of water-based liquids such as mineral water, milk, various milk products, soft drinks, beer, and other similar water-based liquids
- Full, empty, refill, or point level status in vessels, tanks, and pipes
- Factory configured to meet most applications without requiring individual adjustments for different liquids
- Compact plastic/stainless-steel or all stainless-steel housing with integral G 1/2", 3/4", or 1" male thread process connection allows for easy installation
- IO-Link communication versions can be adjusted to work with alcohol- and oil-based liquids, or even powders
- Available outputs include DC-PNP switches and IO-Link communication
- M12 quick disconnect electrical connector
- Color signal LEDs are provided for function verification
- FDA compliant and marked with the 3-A symbol for food and beverage industry hygienic applications (except versions with G 1/2" threads)
- Ability to set each output to detect different media (IO-Link models only)

## Operation

The Endress+Hauser Liquipoint FTW23 capacitance point level switch is commonly used to detect the full or empty status in vessels, tanks, or pipes containing water-based liquids. When used as an empty status switch, it is typically mounted in or near the bottom of the storage vessel to initiate refilling or turn off equipment for dry-running protection. When used as a full status switch, it is mounted near the top of the storage vessel to limit refilling or for overflow protection.

The tip of the Liquipoint sensor evaluates the different dielectric values of air and water-based liquids. When the liquid comes into contact with the sensor tip, the electronics change the switch status.



There are two modes of operation:

- Maximum point level detection (MAX): e.g. Overflow protection. The Liquipoint keeps the electrical switch closed as long as the sensor is not yet covered by liquid.
- Minimum point level detection (MIN): e.g. Dry running protection. The Liquipoint keeps the electrical switch closed as long as the sensor is covered by liquid.

Choosing the MAX or MIN mode of operation ensures that the Liquipoint switches in a safety-oriented manner even in an alarm condition. The electronic switch opens if the point level is reached, if a fault occurs, or if the power fails.

# Liquipoint® FTW23 Capacitance Level Sensors

## Configuration

The Liquipoint FTW23 is preconfigured at the factory to work with most applications without the need for an adjustment for different liquids. The electrical switch point of the device is factory-set for water-based liquids with a dielectric constant >20. Versions with IO-Link communication capability can be configured with two separate switching thresholds for medium detection and differentiation; and can also be adjusted to work with alcohol- and oil-based liquids, or even powders with a dielectric constant >1.5. A test magnet (not provided) can be used to carry out a functional test while in operation.

## Approvals

- 3-A (Certain Models)
- CSA
- CE



**Liquipoint FTW23 Capacitance Level Sensor Selection**

Model	Description	Housing/Protection	Wetted Parts	Process Connection	Operating Voltage	Output	Connection	IO-Link	Approval	Price	Weight (lbs)	
<a href="#">FTW23-CA4MWWJ</a>	Liquipoint capacitance liquid level switch	316L stainless steel IP65 IP67 (NEMA 4X)	316L stainless steel and PEEK (polyether ether ketone)	G1/2 male thread	10 to 30 VDC	Switch PNP, 3-wire, N.O./N.C. complementary	4-pin M12 quick-disconnect	N/A	CSA	\$275.00	1.03	
<a href="#">FTW23-CA4MW5J</a>				G3/4 male thread					CSA 3-A	\$253.00	1.00	
<a href="#">FTW23-CA4MWSJ</a>				G1 male thread					CSA 3-A	\$289.00	1.68	
<a href="#">FTW23-CA4NWWJ</a>				316L stainless steel IP66 IP68 IP69 (NEMA 4X/6P)					G1/2 male thread	CSA	\$345.00	0.89
<a href="#">FTW23-CA4NW5J</a>									G3/4 male thread	CSA 3-A	\$324.00	1.01
<a href="#">FTW23-CA4NWSJ</a>									G1 male thread	CSA 3-A	\$360.00	1.14
<a href="#">FTW23-CA7MWWJ</a>		316L stainless steel IP65 IP67 (NEMA 4X)			G1/2 male thread	18 to 30 VDC		Switch PNP, 3 or 4 wire, 2 PNP freely configurable outputs with IO-Link	Yes	CSA	\$275.00	1.14
<a href="#">FTW23-CA7MW5J</a>					G3/4 male thread					CSA 3-A	\$253.00	0.94
<a href="#">FTW23-CA7MWSJ</a>					G1 male thread					CSA 3-A	\$289.00	1.14
<a href="#">FTW23-CA7NWWJ</a>				316L stainless steel IP66 IP68 IP69 (NEMA 4X/6P)	G1/2 male thread					CSA	\$345.00	0.85
<a href="#">FTW23-CA7NW5J</a>					G3/4 male thread					CSA 3-A	\$324.00	1.00
<a href="#">FTW23-CA7NWSJ</a>					G1 male thread					CSA 3-A	\$360.00	1.14

Note: For Wiring and Installation information refer to the additional Vendor Specs and Operating Information PDFs.

# Liquipoint® FTW23 Capacitance Level Sensors

Liquipoint FTW23 Capacitance Level Sensor Resources				
Model	Drawing Link	Vendor Technical Specifications	Vendor Operating Manual	IO-Link Quick Start Guide
<a href="#"><u>FTW23-CA4MWVJ</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	N/A
<a href="#"><u>FTW23-CA4MW5J</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	N/A
<a href="#"><u>FTW23-CA4MWSJ</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	N/A
<a href="#"><u>FTW23-CA4NWVJ</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	N/A
<a href="#"><u>FTW23-CA4NW5J</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	N/A
<a href="#"><u>FTW23-CA4NWSJ</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	N/A
<a href="#"><u>FTW23-CA7MWVJ</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>
<a href="#"><u>FTW23-CA7MW5J</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>
<a href="#"><u>FTW23-CA7MWSJ</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>
<a href="#"><u>FTW23-CA7NWVJ</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>
<a href="#"><u>FTW23-CA7NW5J</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>
<a href="#"><u>FTW23-CA7NWSJ</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>	<a href="#"><u>PDF</u></a>

Note: For Wiring and Installation information refer to the additional Vendor Specs and Operating Information PDFs.