

Things to Consider When Selecting Fluid Level Sensors

Optical fluid level sensors do not measure the liquid level, instead they detect the presence or absence of liquid. When selecting the correct fluid level sensor for your application, it can be difficult at times as there are so many options available. This article provides the necessary information you need to know when selecting any of **SST's fluid level sensors**.

Before researching all the sensor types that SST has to offer, it is important to look at the bigger picture and understand where and how the sensor will be used. This means looking at where the sensor is going to be mounted, the application requirements and environmental factors. These are explained below.

Mounting position: where the sensor is to be mounted can narrow the selection field, for example, is space a restrictive factor?

Application: where the sensor is to be used can narrow the selection field:

- Food or beverage application?
- Medical or chemical handling?

Environmental factors; the environment in which your sensor will be working has a direct bearing on the material type you should select. Fluid type and temperature are key factors; for example, is the liquid corrosive; high or low temperature?

Following on from this, the next few steps is to narrow down the number of options available to you.

Step 1 - Sensor Material

It is important to consider what material is more than likely going to suit your mounting, application and environmental requirements. Does it have to withstand corrosive liquids, extreme pressure or temperatures?

Please note: when making your selection that the body of some of our fluid level sensors are made from a different material to the sensor tip.

SST offers three housing material options depending on fluid sensor type; Polysulfone, Trogamid® (EU food-contact grade) or stainless steel. Again, depending on sensor type, SST offers three tip material options; Polysulfone, Trogamid® (EU food-contact grade) or glass.

Step 2 - Sensor Types

This is the step where you look closely at the sensor specifications and make sure it is going to be suitable for your application environment.

There are six fluid level sensor ranges within the liquid level family; [Optomax Digital](#), [Optomax Industrial](#), [Optomax Industrial Glass](#), [LLHP](#), [POS](#) and [Optomax Basic](#). The following gives a brief overview of each sensor and why they differ from each other based on operating voltage, temperature range and application.

[Optomax Digital](#)



The Optomax Digital Liquid Level Switches are ideal for applications with restricted space that require a miniature, low power and low cost sensing solution.

- Operating voltage: 4.5V to 15.4VDC
- Operating temperature range: -25°C to +80°C or -40°C to +125°C
- Typical applications: Best suited for low power signalling of liquid presence/absence.
- Material: Available in Polysulfone or Trogamid

[Optomax Industrial](#)



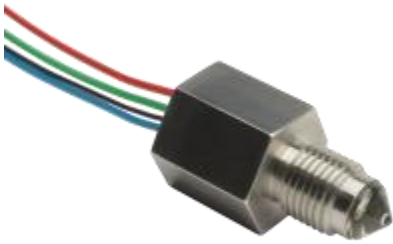
The Optomax Industrial range of liquid level switches were designed to offer industrial supply voltages and outputs that can directly drive higher power loads.

- Operating voltage: 4.5V to 15.4VDC or 8V to 30VDC
- Operating temperature range: -25°C to + 80°C or -40°C to +125°C
- Typical applications: Designed where high power signalling of liquid presence/absence is required, or, operation at higher (industrial) voltages.

Industrial range fluid level sensors are capable of driving high power loads, and are able to (depending on output type) sink/source up to 1A.

- Material: Available in Polysulfone or Trogamid

Optomax Industrial Glass



The Optomax Industrial Glass range of liquid level switches can operate in high pressure, high temperature aggressive environments due to their stainless steel and glass design, while offering industrial supply voltages and outputs that can directly drive loads.

- Operating voltage: 4.5V to 15.4VDC or 8V to 30VDC
- Operating temperature range: -40⁰C to +125⁰C
- Typical applications: All the technical capabilities of the Optomax Industrial Range with the added benefits of a stainless steel housing and glass sensing tip, allowing the sensor to be used in harsh chemical environments.
- Material: Stainless steel body with glass sensing tip

LLHP (High Performance) Series



The LLHP range of liquid level switches offer larger mounting threads and robust stainless steel housings that can survive in aggressive environments.

- Operating voltage: 4.5V to 15.4VDC or 10V to 45VDC
- Operating temperature range: -25⁰C to + 80⁰C or -40⁰C to +125⁰C
- Typical applications: Comes in a rugged metal housing, designed for aggressive environments. Capable of withstanding high and low temperatures and with options for high switching currents. They have multiple output configurations and several thread types available, or, if required can be supplied with a custom thread type.

- Material: Stainless steel with Polysulfone tip

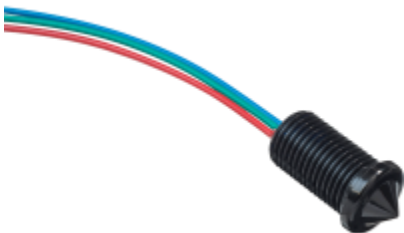
LLHP (High Performance) Series



The POS Glass Tip range of liquid level switches are robust and rugged, ideal for operation in harsh industrial environments, aggressive chemicals and extreme temperatures up to 140⁰C

- Operating voltage: 12V to 28VDC
- Operating temperature range: -25⁰C to 100⁰C or -40⁰C to + 140⁰C
- Typical applications: With its stainless steel housing and Simax crystal glass sensing tip, the POS fluid level sensors are ideally suited for use in harsh chemical environments
- Material: Stainless steel body with glass sensing tip

Optomax Basic



The Optomax Basic range of liquid level switches are an analogue optics only solution designed to meet the needs for price sensitive, high volume OEM applications.

- Operating voltage: 3.3V to 24VDC
- Operating temperature range: -25⁰C to + 80⁰C
- Typical applications: Designed primarily with price sensitive high volume OEM applications in mind, for example white goods, vending machines, and automotive applications. Requires a clean, protected, and stable power supply and an available microcontroller, or other circuit, to determine whether the sensor is in air or liquid based on its analogue output voltage.
- Material: Available in Polysulfone or Trogamid

NOTE: Power supply and microcontroller not supplied with the switch.

Step 3 - Select and Test

Once you have narrowed your selection down to one or two products that may be of interest, SST recommend to test a sample of the product to ensure it will work in your application. We normally recommend testing the product, fully submersed in the liquid at maximum temperature for 2 weeks.

If at any point you are unsure of what fluid level sensor is going to be suitable for your application, our team of engineers provide full application and technical support on all of our products and would be happy to assist in choosing the right sensor that will meet your requirements.