



**SIDE MOUNTED
MAGNETIC LEVEL SWITCH**

[FDI - SMMLW - 506]

INTRODUCTION

A level switch is an electrical or mechanical method for measuring the level of a liquid, powder. It is designed to activate an alarm if the material level in a container passes a predetermined height or depth. When a level switch detects that a tank is full, it is referred to as full or upper limit detection. If the level of the material drops, indicating that the tank is nearly empty, the switch will also provide an alert, which is referred to as empty or low-level detection.

Level switches are an essential part of production operations and are used in harsh conditions where there are excessive in temperature, pressure, and vibrations. The variety of level switches makes them applicable to any conditions for measuring a wide array of products. Their accuracy, reliability, and durability are a necessity for the efficiency of industrial applications.

The purpose of a float level switch is to open or close a circuit as the level of a liquid rises or falls.

All float operated liquid level controls operate on the basic buoyancy principle which states “the buoyancy force action on an

object is equal to the mass of liquid displaced by the object.” As a result, floats ride on the liquid surface partially submerged and move the same distance the liquid level moves. Because of this, they are normally used for narrow level differential applications such as high-level alarm or low-level alarm.

A change in fluid level can correspondingly cause the float to travel up or down. The float end fixed with a permanent magnet and reed switch is placed in horizontal to the float. On Level raises, the float moves near to the reed switch, the magnet makes the reed switch state change. This change in output contact is used to detect level signal.

FIDICON is a pioneer in the field of manufacturing Level Switch in India since 2002 years of designing, manufacturing, installation and service of the same. Side Mounted Magnetic Level Switch manufactured by FIDICON are user friendly and easy to install. It comes in many ranges and can be tailor made as per the requirements of customers.



Working Principle

The reed switch relies on two basic scientific principles namely: buoyancy and magnetism. Buoyancy causes the float (which contains a magnet) to rise with the liquid and magnetism helps open and close the switch. A change in liquid levels raises or lowers the float up or down.

The end of the pivot arm (nonfloat side) contains a permanent magnet that can repel the switch magnet (inside the stationary 'stem' of the entire structure).

When the float magnet moves close to the switch's stationary stem, the float magnet repel the switch magnet which either opens or closes the Electrical circuit contact which is used to detect the level.

Operation

Level Switches operate on a direct, simple principle. In most models, a float encircling a stationary stem is equipped with powerful, permanent magnets. As the floats rises or lowers with liquid level, the magnetic field generated from within the float actuates a hermetically sealed, magnetic reed switch mounted within the stem.

Side mounted level switch operate as a direct result of rising or falling liquid, a magnetic field is moved into the proximity of a reed switch, causing its actuation.

Application

- Research Center
- Chemical industries
- Scientific laboratory
- Pump or valve Control
- High of low-level alarm
- Heater Protection
- Boiler low water cut-off
- Explosion proof installations
- High of low-level alarm

Features

- Snap Action
- Easy to maintain
- Easy to Install
- Accurate Mechanism
- Longer Service Life
- Sturdy design
- Accurate Dimensions

Advantages

Level switches are an economical method for monitoring, controlling, and regulating the levels of bulk materials and fluids or liquids. Every manufacturing process require control of raw materials to avoid waste and ensure efficiency. This has become more important in today's competitive markets, where slight uncertain and errors can have multiple effects on production and product development.

The minute and small appearance of level switches may cause them to be categorized and defined as insignificant. In reality, the minor investment in level switches can lead to the effective use of raw materials.

■ Money Savings

In modern business, every attempt to save money helps in increasing profits. The inventory and raw materials of a company are its greatest assets and have to be protected, monitored, and controlled to avoid losses. Though there have been important developments in the automation of inventory control.

The similarity of inventory loss necessitates constant observing of assets. In the case of bulk materials and fluids, such monitoring can be difficult due to the nature of the products. Level switch manufacturers are well aware of the difficulties interrelated with controlling the loss of bulk materials and have designed a wide selection of level switches capable of providing detailed data regarding the volume and quantities of on hand raw materials.

■ **Switch Installation**

Regardless of the type of level switch, whether it is continuous level measurement or point level detection, installation is easy. They can be installed and operating in an less hour, depending on the type of switch. The ease of installation makes it possible to move and reposition them when there are changes in storage arrangements.

■ **Automatic Advantages**

Unlike floats, yardsticks, and other methods of product level monitoring, level switches are capable of automatically providing accurate data on time to a computer without the need to activate or initiate another device. In cases where the level switch is not connected to a controller, the data can be read from a digital/analogue display(if applicable) with little effort.

For many years, the monitoring of storage tanks, large containers required a routinely scheduled and constant supervision of products by personnel. In most cases, the readings were inaccurate and not completed. All the footwork and labour required by the old fashion data collection systems has been eliminated by the automatic reporting level switches.

■ **Reliability Advantages**

The design and engineering of modern level switches remove any concern for poor performance or inaccurate data. The casings and materials used to produce level switches ensure that they will provide precise accurate readings for a long time. Since level switches have few moving parts, they do not require repairs or maintenance to accumulate data. Minor calibrations and adjustments may be necessary to guarantee the accuracy of a level switch but its failure is highly unlikely.

■ **Preventing Waste**

The control of the storage of bulk and liquid materials assists in avoiding waste from discharge and overflows. A properly programmed level switch can activate a valve or pump to control overflow and avoid losses. With continuous level measurement level switches, the correct amount of raw materials is constantly maintained. Point level detector level switches can sound an alarm when a container is too full or the level is too low.

■ **Compact Benefit**

Unlike massive data collection methods, level switches are compact and can be handheld. Their compact design makes it possible to fit them into any size container regardless of its shape, dimensions, or location. Their compact configuration makes it possible to position a switch accurately such that it can collect data without interference.

■ **Switch Sensitivity**

The main reason for investing in level switches is their accurate sensitivity and ability to provide exceptional precision data. As every manager and supervisor knows, it is impossible to make correct decisions without up to date and accurate information. When materials are being sent from a container to production, they must be in the exact quantities that the process requires. It is for these reasons that level switches are an essential part of inventory control and production operations.



ENQUIRY SPECIFICATIONS:

- [1] Service Media Details.
- [2] Size/Connection
- [3] System Operating and Design Pressure.
- [4] System Operating and Design Temperature.
- [5] Material Specifications (Body, Internal)

RECOMMENDED SPARES

- [1] Gasket / as per customer need
- [2] Float

OTHER RANGE OF PRODUCTS

- [1] Flame Arrester
- [2] Breather Valve
- [3] Level Indicators
- [4] Rotameters
- [5] Emergency Relief Valve
- [6] Gauge Hatch
- [7] Strainers
- [8] Pressure Reducing Valve
- [9] Safety Relief Valve
- [10] Flowmeters
- [11] Level Switches
- [12] Pressure Reducing Station
- [13] Level Gauge, etc.

Any Query?

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