measureable
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Set Your Sights On Better Level Measurement

ABLE's Magnetic Level Gauges are progressively replacing other outdated modes of level technology, providing clear indication and non-invasive liquid level control in any chamber configuration required to suit process connections.

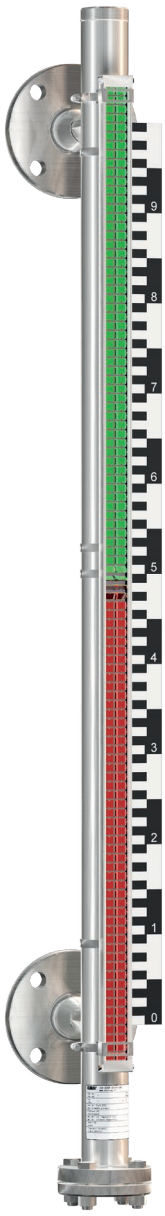
Principle of Operation

Magnetic level indicators use the principle of magnetic field coupling to provide fluid level information, to activate a switch, or to provide continuous level data. Magnetic coupling allows an MLI to measure levels without direct contact between the indicator and the fluid in the vessel. A magnetic field consists of the lines of flux surrounding a magnet. The field acts on other objects (magnets or ferromagnetic materials). When a magnetic field acts upon another object with sufficient force to move the object, the magnet is said to be magnetically coupled with that object.

The float, located inside a chamber, tracks the surface of the liquid. A magnet or magnet assembly inside the float creates a magnetic field, which penetrates the chamber wall to couple with the magnetic field created by the magnets in the indicator flags that display the fluid level. As the float rises and falls with the process level, tripping the flags, it also stimulates any attached transmitters and switches, providing a signal back to the control system.

The float chamber is essentially a stainless steel column with connections to match those of the vessel in which level is to be measured. These connections may be side couplings or flanges, or top and bottom flanges. The diameter and wall thickness of the chamber may be varied to match the process pressure in line with PED requirements.

A Magnetic Level Gauge is often used for applications where a sight glass would prove unsafe, environmentally unfriendly or difficult to see. Deploying a Magnetic Level Gauge will eliminate the typical shortcomings of a sight glass, including:



- High pressures, extreme temperatures, and toxic or corrosive materials may cause a risk of fugitive emission of dangerous substances.
- Some chemical materials within a process vessel or storage tank can attack the glass, causing discoloration of the sight gauge, thus decreasing level visibility.
- Liquid-liquid interfaces can be very difficult to read in a sight glass particularly if the fluids are of similar colour. Clear liquids are also difficult to see in a sight glass.

In summary, the key reasons for selecting an MLI over a sight glass are:

- ***Improved safety***
- ***Increased visibility***
- ***Simplified installation and maintenance***
- ***Non-invasive alarms and transmitters***
- ***No process liquid in contact with glass***
- ***Measure both interface and top level with one indicator***
- ***Low cost solution for measuring highly corrosive or unstable surface media***
- ***Pressures to 630 bar (9137 psi)***
- ***Temperatures to 400°C (752°F)***
- ***Min. SG 0.27g/cm3***
- ***Lower long-term cost of ownership***
- ***Can be manufactured in exotic materials such as Hastelloy and 904L Stainless Steel along with a range of plastics when chemical compatibility or weight are an issue***

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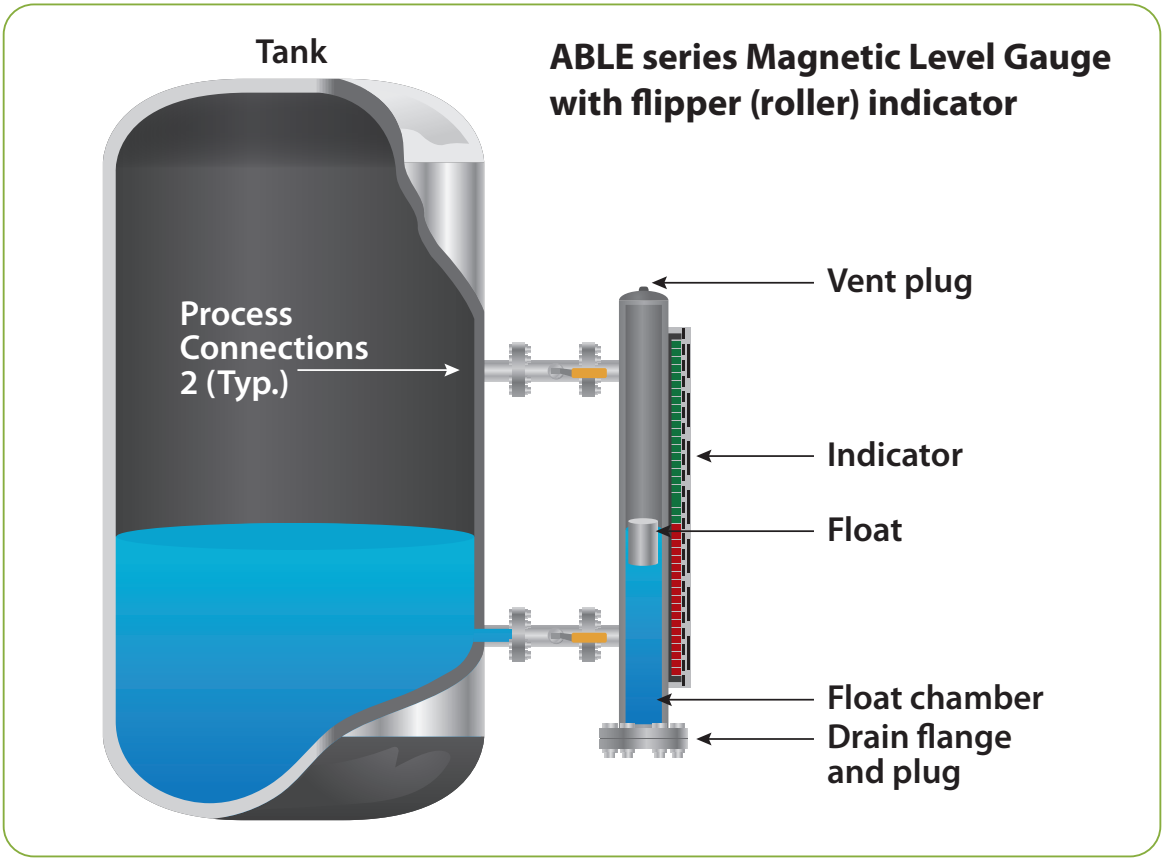

ABLE Fusion Level Gauge – Magnetic Level & Guided Wave Radar

To further optimise level measurement for a wide range of applications, The ABLE Fusion Gauge combines the operation of a float operated magnetic level indicator with a guided wave radar to offer two independent, proven level technologies in one redundant system.

The magnetic level indicator offers a clear visual level display and can be supplied with a reed chain transmitter, magnetostrictive transmitter or switches for high and low level alarm requirements, operating in conjunction with the level indicator float.

The guided wave radar offers an independent top mounted direct level and interface measurement based on high frequency microwave pulses that are transmitted along a guide rod. The pulses are reflected back by the liquid surface to a receiver, providing a level measurement accuracy of +/-3mm.

Features

- ***2 x independent integrated technologies for redundancy***
- ***Difference in readings between MLI and GWR offer system performance feedback***
- ***No calibration required for either measurement technology***
- ***2-wire, intrinsically safe or explosion proof, loop powered level transmitter***
- ***HART® communication protocol***
- ***Additional outputs available***

For more information, please contact ABLE Instruments on +44 (0)118 9311188 or by email: info@able.co.uk

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